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Catalogue of the Pharmacopoeias, Dispensatories, Formularies, and Allied Publications (1493-1957) in Lloyd Library

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Among its most prized possessions Lloyd Library treasures a collection of pharmacopoeias, dispensatories, formularies, and allied publications of all countries, in which such publications have appeared and been adopted for official use. Begun in 1864 by John Uri Lloyd, who founded Lloyd Library in the same year, this collection now includes more than 1000 titles published from 1493 to the present. No effort was spared by the founder, his brother Curtis Gates Lloyd, and subsequent librarians to build it up to its present eminent status.

The following catalogue is based on the unpublished manuscript prepared many years ago by John Uri Lloyd for use by Lloyd Library but appears herewith in an amended and up-to-date version compiled by Mrs. Corinne Miller Simons. The arrangement is alphabetical by countries and their geographical subdivisions as well as titles and, as far as possible, chronological by dates of publication. Elaborate titles are given in abbreviated form, as detailed textual comparisons and bibliographical studies are beyond the scope of this catalogue.

Apart from their immense importance and practical use in the lives of countless practicing pharmacists and medical men, pharmacopoeias and related works are extraordinary "witnesses of world history" (Urdang, 1946). They reflect a special facet of scientific, cultural, and even political history, extending from the dim days of pre-history down to the present time. As Fairbairn (1957) has put it:

It is an interesting fact that human societies, civilized or primitive, have always possessed a *materia medica* for the treatment of disease. Why, we may ask, should men feel that by ingesting a foreign body their diseases would disappear? Why not merely alter the diet, try physical treatments etc.? We can only assume that this reaction to illness is "instinctive" as is the sensible, though instinctive, reaction of rubbing the affected part after a blow. Assuming this motive then it is

possible to regard *materia medica*, ancient and modern, as the result of widespread and prolonged trial and error attempts to discover cures by ingesting materials especially those from the plant kingdom. In other words, they have arisen by empirical methods. In the absence of adequate knowledge this is a sound approach; if a drug is discovered that works, then use it. On this basis the use of many drugs has survived from very ancient times.

It is impossible to trace here the long and devious routes by which such tradition has come down to us, even to the time marked as the beginning of this catalogue of printed works. The interested reader will find many pertinent details and facts in Sarton's *Introduction to the History of Science*, and in various other specialized sources (Arber, 1938, Fischer, 1929, Forbes, 1904, Kremers and Urdang, 1951, Möbius, 1937, Schmidt, 1927, Tschirch, 1906, Urdang, 1946 and 1951, Winckler, 1854). The actual development of pharmacopoeias was treated in considerable detail by Urdang (1951) on the occasion of the publication of Volume I of *Pharmacopoea Internationalis* by the World Health Organization (1951).

After pharmacy became a separate science, pharmacists not only practiced their profession but often took an active part in advancing the basic sciences contributing to the progress of pharmacy. Lehmann (1951), for instance, has given us a fascinating account of the outstanding pharmaceutical families of Swabia and their contributions to the advancement of botany. The illustrious names appearing in his roster include Leonhart Fuchs (1501-1566), Johann Georg Gmelin (1709-1755), Joseph Gottlieb Koelreuter (1733-1806), Joseph Gärtner (1732-1791), and Karl Friedrich Gärtner (1772-1850). With the beginning of modern chemistry other distinguished pharmacists became outstanding chemists.

A further interesting sidelight on the evolution of pharmacopoeias is apparent from the concomitant evolution of the pharmacy itself. The famous Squibb Ancient Pharmacy, so carefully catalogued by Urdang (1940), is located in the Squibb Building in New York City and contains "a collection of 15th to 19th century pharmaceutical shelfware, utensils, books, documents, etc." A similar collection, known as the Historical Pharmacy Museum, is now being built up by the City of New Orleans in the same house, 514 Chartres Street, the oldest street in the city, that once contained "La Pharmacie Française", founded in 1820 by Louis Dufilho, reputedly the first registered pharmacist to practice in this country.

Looking at the story of the U.S.P., it may be interesting to note that the first edition was published in 1820, that revisions of it were regularly prepared every ten years by a committee of physicians and pharmacists, and that the Eighth Revised Edition of 1905 became the legal standard under provisions of the National Food and Drugs Act in January 1907. In the opinion of Kremers and Urdang (1951) "no pharmacist in the world is so well supplied with authoritative literature as is the American."

CATALOGUE OF THE PHARMACOPOEIAS, DISPENSATORIES, FORMULARIES,
AND ALLIED PUBLICATIONS (1493-1957) IN LLOYD LIBRARY

AUSTRALIA

The British Pharmacopoeia is official in Australia.

AUSTRIA

Austria-Codex, by Otto Zekert & Edmund Weis			
4th ed.	400 pp.	Wien	1937
Dispensatorium Pharmaceuticum Austriaco-Viennense			
Reissue of 1729 ed.	273 pp.	Viennae Austriae	1737
Reissue of 1729 ed.	273 pp.	Viennae Austriae	1744
Reissue of 1729 ed.	441+28 pp.	Bruxellis	1747
Reissue of 1729 ed.	202 pp.	Vindobonae	1765
Reissue of 1729 ed.	252 pp.	Lugduni-Batavorum	1786
Handbuch der Pharmakologie als Erläuterung—Öster. Pharmacopöe vom			
Jahre, 1836, by C. J. Meyer			
2nd ed.	368 pp.	Güns	1838
Österreichische Landes-Pharmakopöe, by Vincenz Kletzinsky			
new ed. vol. 1	270 pp.	Wien	1860
new ed. vol. 2	669+37+98 pp.	Wien	1860
Pharmacopoea Austriaca			
2nd ed.	158 pp.	Vindobonae	1814
2nd ed.	264 pp.	Vindobonae	1818
(German title "Oestreichische Pharmacopöe" also and notes in German by J. B. Trommsdorff)			
5th ed.	272 pp.	Viennae	1855
6th ed.	293 pp.	Viennae	1869
7th ed.	380 pp.	Viennae	1889
Suppl. of 7th ed.	43 pp.	Viennae	1900
8th ed.	485 pp.	Viennae	1906
Die Wichtigsten Veränderungen und Neuerungen der Pharmacopoea Aus-			
triaca, by T. V. Munzberger			
7th ed.	12 pp.		1889

BELGIUM

Pharmacopoea Belgica			
	228 pp.	Hagae-Comitis	1823
	446 pp. (French)	Bruxelles	1854
Pharmacopoea Belgica			
2nd ed.	393 pp. (Latin)+		
	442 pp. (French)	Bruxelles	1885
3rd ed.	271 pp. (Latin)+		
	324 pp. (French)	Bruxelles	1906
3rd. ed. 1st Suppl.	32 pp. (Latin)+		
	35 pp. (French)	Bruxelles	1912
French title: Pharmacopée Belge			
4th ed.	754 pp.	Bruxelles	1930
4th ed. rev.	882 pp.	N. P.	1936
Pharmacopoea Belgica Nova			
	374 pp. (Latin)+		
	446 pp. (French)	Bruxelles	1854
Pharmacopoea Auctior et Correctior jussu Nobilissimi Amplissimique			
Senatus Bruxellensis Edita			
	237 pp.	Bruxellae	1671
Pharmacopoea Bruxellensis			
2nd ed.	192 pp.	Bruxelles	1739
Brusselsche Apotheek—(From 2nd Latin ed.)			
	277 pp.	Amsterdam	1742
Codex Medicamentarius Amplissimi Senatus Montensis Auctoritate Munitus			
	215 pp.	Montibus Hannoniae	1755
Pharmacopée Manuelle, by J. B. van Mons			
	235 pp.	Bruxelles	n.d.

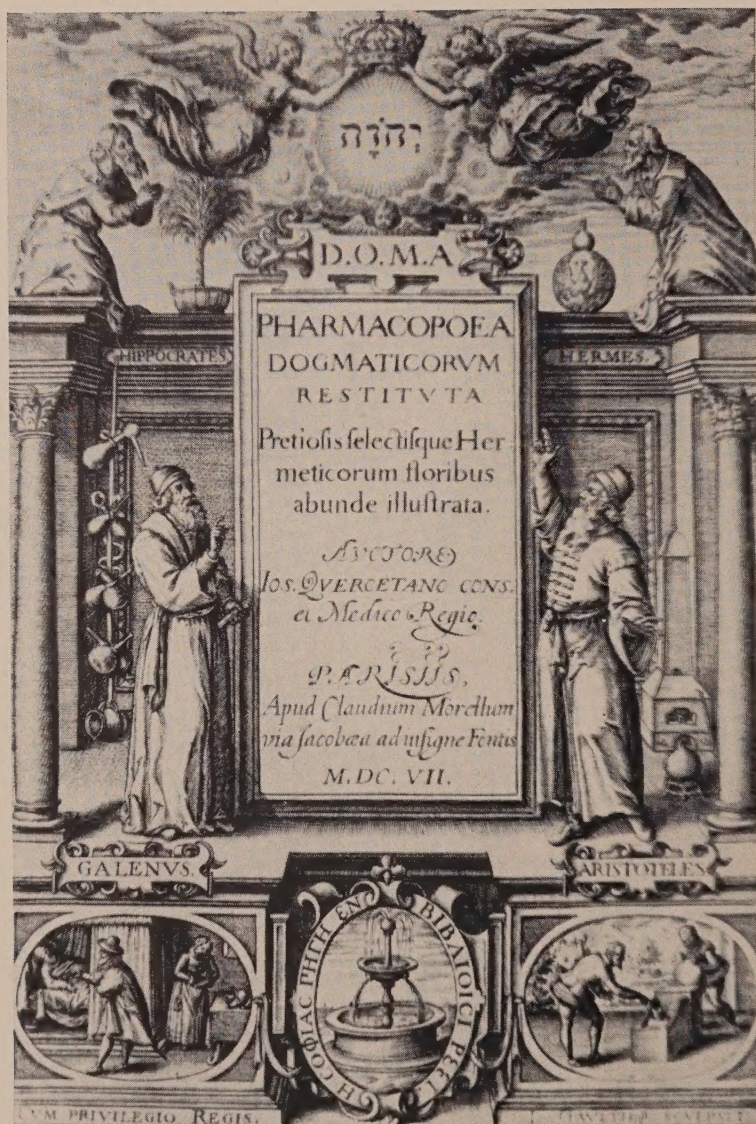


FIG. 1. Title page of *Pharmacopoea Dogmaticorum Restituta*. Paris, 1607.

Pharmacopoeia Manualis, A Concilio Medico Praefecturae Utrinaque
Nethae Edita 208 pp. Antwerpieae 1812

BOLIVIA

The French Pharmacopoeia is official in Bolivia.
See Pharmaceutical Abstracts vol. 6, p. 235, 1940.

BRAZIL

Pharmacopoeia Dos Estados Unidos Do Brazil, by Rodolpho Albino Dias da
Silva. 1149 pp. Sao Paulo 1929

CANADA

The British Pharmacopoeia is official in Canada.
Canadian Formulary of Unofficial Preparations.
Ontario College of Pharmacy. Approved and adopted by Can. Pharm.
Assoc. 5th ed. Toronto 1921
Canadian Supplement, 1944, to the British Pharmacopoeia, Being Division
III of the Regulations under the Food and Drugs Act. 94 pp. Ottawa 1944

CENTRAL AMERICA

European Possessions in South and Central America make use of the
pharmacopoeas of their respective nations.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

CHILE

Farmacopea Chilena 3rd ed. 724 pp. Santiago de Chile 1941

COLOMBIA

The United States Pharmacopoeia, the French Pharmacopoeia and the
British Pharmacopoeia are used in Colombia.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

COSTA RICA

The United States Pharmacopoeia is used in Costa Rica.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

CUBA

The United States Pharmacopoeia is used in Cuba.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

DENMARK

Dansk Farmaceutforening—Gennem 75 aar 1873–1948. 228 pp. Köbenhavn 1950
Pharmacopoea Danica 364+70 pp. Francofurti et Lipsiae 1786
228 pp. Lipsiae 1821
316 pp. Hafniae 1840
284 pp. Kjobenhavn 1841
345 pp. Hauniae 1868
2nd ed. 345 pp. Hauniae 1869
1907 ed. Udgiven 516 pp. Kjobenhavn 1926
8th ed. 727 pp. Köbenhavn 1933
9th ed. Bd. I 384 pp. Köbenhavn 1948
9th ed. Bd. II 779 pp. Köbenhavn 1948
9th ed. Bd III 467 pp. Köbenhavn 1948
9th ed. Addendum 1952 181 pp. Köbenhavn 1952
Pharmacopoeia Noscomii Civitatis Havniensis, by L. Ammentorp & C.
Nebelong 96 pp. Kjobenhavn 1893

REPUBLICA DOMINICANA

The British Pharmacopoeia is used in the Republica Dominicana.
See American Journal of Pharmacy, v. 121, p. 232, 1950.

ECUADOR

The French Pharmacopoeia is used in Ecuador.
See Pharmaceutical Abstracts, v. 6, p. 235, 1940.

EGYPT

The British Pharmaceutical Codex of 1949 states that Egypt uses a modified digest of the British, French, and United States Pharmacopoeias.
Journal of Pharmacy and Pharmacology, v. 2, p. 408, 1950.

EL SALVADOR

The French Pharmacopoeia is used in El Salvador.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

ESTONIA

Eesti Farmakopõa Esimene Väljaanne. (Pharmacopoea Estonica)	Tallinn	1937
751 pp.		

EUROPE

Codex Medicamentarius Europaeus, by D. C. Sprengel

Sectio 1. Pharmacopoea Londinensis			
2nd ed. v. 1	128 pp.	Lipsiae & Soraviae	1821
Pharmacopoea Edinburgensis			
2nd ed. v. 2	140 pp.	Lipsiae & Soraviae	1821
Pharmacopoeia Dublinensis			
2nd ed. v. 2	148 pp.	Lipsiae & Soraviae	1822
Sectio 2 Pharmacopoea Gallica			
	220 pp.	Lipsiae	1819
Codicis Medicamentarii Formulae			
	419 pp.	Lipsiae	1819
Sectio 3 Pharmacopoeia Svecica			
v. 1	228 pp.	Lipsiae	1821
Pharmacopoeia Danica			
v. 2	228 pp.	Lipsiae	1821
Sectio 4 Pharmacopoea Batava			
v. 1	558 pp.	Lipsiae	1811
v. 2	374 pp.	Lipsiae	1811
2nd ed.	78 pp. + 728 pp.	(D. J. G. Langermann)	
		Lipsiae	1824
2nd ed. enl.	30 pp. + 805 pp.	Lipsiae	1824
Sectio 5 Pharmacopoea Rossica (et Fennica)			
v. 1 New ed.	376 pp.	Lipsiae et Soraviae	1821
Pharmacopoea Regni Poloniae			
v. 2	199 pp.	Lipsiae et Soraviae	1821
Sectio 6 Pharmacopoea Hispanica			
v. 1	207 pp.	Lipsiae et Soraviae	1822
Pharmacopoea Lusitanica			
v. 2	207 pp.	Lipsiae et Soraviae	1822
Sectio 7 Literatura Pharmacopoeiarum—(Scherer, A.N.A.)			
Literatura Pharmacopoeiarum Collecta			
	232 pp.	Lipsiae et Soraviae	1822
Pharmacopoeae Recentiores, Anglica, Gallica, Germaniae, Helvetica, Russiae inter se collatae, by H. Hager			
Supp. Manualis Pharm. Hageri	300 pp.	Vratislaviae	1869

FINLAND

Pharmacopoea Fennica			
	116 pp.	Aboae	1819
2nd ed.	175 pp.	Helsingforsiae	1850
2nd ed.	192 pp. Anvising	Helsingfors	1851

FRANCE

Code Des Medicamens, ou Pharmacopée Française, 1818			
	373 pp.	Paris	1819
Code Pharmaceutique, ou Pharmacopée Française, by A. J. L. Jourdan & A. L. A. Fee			
2nd ed.	588 pp.	Paris	1826
Codex Medicamentarius Gallicus. Codex Français			
7th ed.	1227 pp.	Paris	1949
Codex Medicamentarius Gallicus—Pharmacopée Française, (ed. 1908)			
	999 pp.	Paris	1927
Suppl. (1920)	91 pp.	Paris	1927
Nouveau Suppl.	94 pp.	Paris	1926
Codex Medicamentarius Gallicus Seu Pharmacopoea Gallica Pharmacopée Française			
v. 1 6th ed.	623 pp.	Rennes	1937
v. 2 6th ed.	1192 pp.	Rennes	1937
Codex Medicamentarius, Seu Pharmacopoea Parisiensis, by H. T. Baron			
	126+251 pp.	Parisiis	1732
	132+268 pp.	Parisiis	1748
(Boyer, Joanne-Baptista)			
5th ed.	132+320 pp.	Parisiis	1758
Codex Medicamentarius Pharmacopée Française			
	784 pp.	Paris	1866
	728 pp.	Paris	1884
Suppl.	110 pp.	Paris	1895
Codex Medicamentarius Sive Pharmacopoea Gallica, 1818			
	42+222+405 pp.	Parisiis	1818
Codex, Pharmacopée Française			
	535 pp.	Paris	1837
	535 pp.	Paris	1839
Appendice Therapeutique du Codex, (M. A. Cazenane)			
	218 pp.	Paris	1844
Compendium Pharmaceuticum, Castrensibus Nosocomiis Accomodatum			
	35 pp.	Parisiis	1792
Etude sur les Preparations Galeniques l'Opium Inscritessu Codex de 1866			
P. E. Barret			
	43 pp.	Paris	1886
Nouvelle Pharmacopée ou Recueil (by M. Polonceau)			
	150 pp.	Paris	1804
Pharmacopoeia Extemporanea by T. Fuller & T. Baron			
	600 pp.	Parisiis	1758
Pharmacopoea Nosocomiorum Civilium Argentinensium			
new ed.	111 pp.	Argentorati	1840
Pharmacopoea Gallica			
	220 pp.	Lipsiae	1819
(Codex Medicamentarius Europaeus, Sectio 2)			
Pharmacopée Française, ou Code des Medicamens by F. S. Ratier & O. Henry			
	556 pp.	Paris	1827
Pharmacopée Raisonnée, ou Traité de Pharmacie Practique et Théorique, by N. E. Henry & G. Guibourt			
v. 1	584 pp.	Paris	1828
v. 2	574 pp.	Paris	1828
v. 1	638 pp.	Paris	1834
v. 2	701 pp.	Paris	1834
3rd. ed.	800 pp.	Paris	1847
Pharmacopée Royale Galenique et Chymique, by Moyse Charas			
	1060 pp.	Paris	1676
3rd ed. rev.	454+328 pp.	Paris	1681
Nouv. ed. 3 pts. in 1 vol.	848 pp.	Paris	1691-2
Nouv. ed. rev.	884 pp.	Lyon	1704
Nouv. ed rev.	884 pp.	Lyon	1717
Nouv. v. 1	876 pp.	Lyon	1753

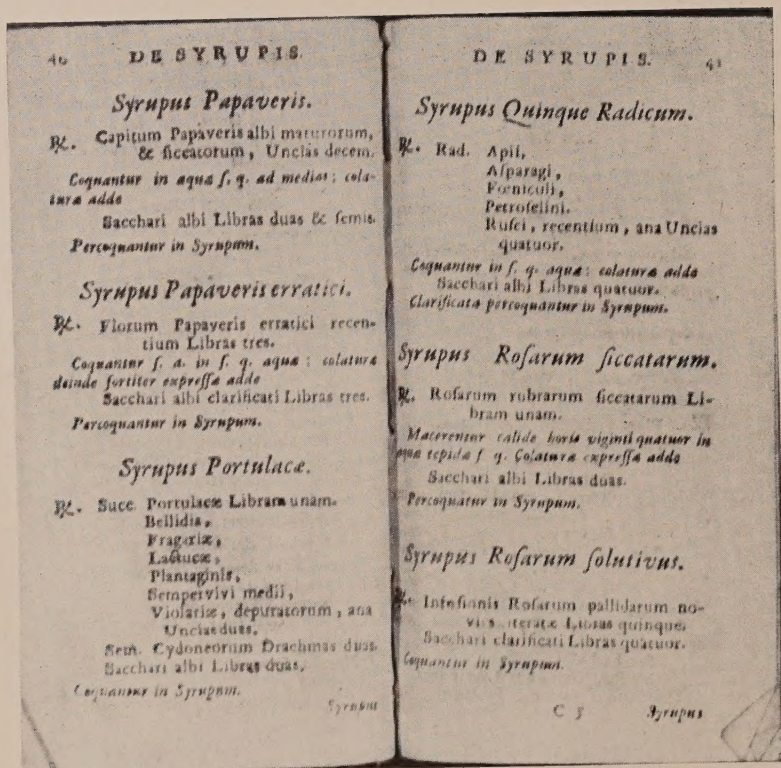


FIG. 2. Text pages of *Pharmacopoea Amstelodamensis*. Amsterdam, 1636.

Mosis Charas Medicinae Doctoris—Pharmacopoea Regia Gallenica, Gallice Ab Authore Conscripta			
	496+449+275 pp.	Genevae	1684
Pharmacopoeia Argentoratensis—(Strassburg)			
	260+60 pp.	Argentorati	1725
	204+28 pp.	Argentorati	1757
Lyons			
Medicamentorium Constitutio seu Formulae Caroli Barbeirac			
	526 pp.	Lugduni	1751
Pharmacopée De Lyon by M. Vitet			
	552+144 pp.	Lyon	1778
Military			
Pharmacopoea Laconica by G. T. C. Handel			
	44 pp.	Hadamariae	1801
Hospitals			
Code Pharmaceutique, a l'Usage des Hospices Civils, des Secours a Domicile, et des Prisons; by A. A. Parmentier			
	new ed. 326 pp.	Paris	1803
Code Pharmaceutique, a l'Usage des Hospices Civils, des Secours a Domicile, et des Infirmeries des Maisons d'Arrêt			
	3rd ed. 453 pp.	Paris	1807
	4th ed. 566 pp.	Paris	1811
Formulae Medicamentorum—Ad Usum Nosodochiorum Militarum			
	47 pp.	Parisi	1781
Formulaire a l'Usage des Bureaux de Bienfaisance de Paris			
	110 pp.	Paris	1838
	110 pp.	Paris	1868
Formulaire a l' Usage des Hôpitaux et Hospices Civils de Paris			
	90 pp.	Paris	1836
	152 pp.	Paris	1867
	152 pp.	Paris	1872
Formulaire Pharmaceutique, a l'Usage des Hôpitaux Militaires de la République Française			
	63 pp.	Paris (An. II)	1794
Formulaire Pharmaceutique a l'Usage des Hôpitaux Militaires			
	111 pp.	Paris	1812
Formulaire Pharmaceutique a l'Usage des Hôpitaux Militaires de la France			
	330 pp.	Paris	1839
Formulaire Pharmaceutique a l'Usage des Hôpitaux Militaires Française			
	557 pp.	Paris	1857
Formulaire des Hôpitaux de Lyon			
	113 pp.	Lyon	1842
Formulaire Pharmaceutique des Hôpitaux Militaires de la France			
	563 pp.	Paris	1870
4th ed.	408 pp.	Paris	1884
	413 pp.	Paris	1890
Annexe	67 pp.	Paris	1895
Formulaire Pharmaceutique a l'Usage des Hôpitaux et Hospices Civils de Paris			
	353 pp.	Paris	1887
Formulaire Hypodermique—par E. Boisson et J. Mousnier			
	183 pp.	Sceaux (Seine)	n.d.
Formulaire Magistral a l'Usage des Hôpitaux et Hospices Civils de Paris			
	90 pp.	Paris	1836
Formulaire Medical de Montpellier—par B. Bories			
	356+11 pp.	Montpellier	1822
	555 pp.	Paris	1830
Formulaire Pratique des Hôpitaux Civils de Paris by F. S. Ratier			
2nd ed.	498 pp.	Paris	1825
3rd. ed.	589 pp.	Paris	1827
4th ed.	626 pp.	Paris	1832
Formules de Médicamens, Usitées dans les Differens Hôpitaux de Paris			
Nouv. ed.	499 pp.	Paris	1780

Formules de Medicamens Usitées dans les Hôpitaux et Hôspices Civils de Paris			
	499 pp.	Tolosa	1780
Formules Medicinales de l'Hostel—Dieu de Paris			
	212 pp.	Paris	1753
Nouveau Formulaire Pratique des Hôpitaux			
2nd. ed.	448 pp.	Paris	1834
4th ed.	489 pp.	Paris	1841
Pharmacopée de Montpellier ou Traité Special de Pharmacie by J. P. J. Gay			
v. 1	788 pp.	Montpellier	1845
v. 2	849 pp.	Montpellier	1846
v. 3	790 pp.	Montpellier	1847
Pharmacopée des Pauvres by M. Jadelot			
	212 pp.	Nancy	1784
New ed.	211 pp.	Nancy An VIII	1800

GERMANY

Animadversiones in Pharmacopoeiam Augustanam by Joannis Zwelfer			
	467+84 pp.	Norinbergae	1657
	468+80 pp.	Norinbergae	1675
	582 pp.	Norinbergae	1693
Arzneibuch für das Deutsche Reich. Dritte Ausgabe (Pharmacopoea Germanica, ed. III)			
	448 pp.	Berlin	1895
	432 pp.	Berlin	1890
Arzneibuch für das Deutsche Reich. Vierte Ausgabe (Pharmacopoea Germanica, ed. IV.)			
	516 pp.	Berlin	1900
Arzneibuch für das Deutsche Reich by Max Biechele			
3rd ed.	411 pp.	Eichstätt	1891
5th ed.	296 pp.	Halle a. S.	1901
Arzneimittel welche in dem Arzneibuch für das Deutsche Reich Dritte Ausgabe (Pharmacopoea Germanica editio III)—nicht enthalten sind			
2nd ed.	379 pp.	Berlin	1879
	320 pp.	Berlin	1891
Bericht der Pharmacopöe Commission des Deutschen Apotheker-Vereins by Chr. Brunnengräber			
	58 pp.	Rostock	1879
Chemische Reagentien und Reaktionen des Deutschen Arzneibuches IV by E. Holdermann and E. Kindle			
	156 pp.	Berlin	1901
Deutsches Arzneibuch			
6th ed.	854 pp.	Berlin	1926
Einige Bemerkungen zur Pharmacopoea Germanica, Vol. 1, Juni 1872 by Justin Radius			
	000 pp.		1878
Ergänzungs-Pharmacopoea Zunächst für die Hessischen Apotheker by H. C. Schwarzkopf			
	53 pp.	Cassel	1842
Erster und Zweiter Nachtrag zum Deutschen Arzneibuch			
6th ed. 1926	14 pp.	Berlin	1933
Etwas über das neue Londoner und andere Apothekerbücher			
	124 pp.	Hamburg	1790
Gehe's Codex			
6th ed.	1272 pp.	Dresden	1933
Nachtrag I	264 pp.	Dresden	1934
Nachtrag II	240 pp.	Dresden	1935
7th ed.	1787 pp.	Dresden	1938
Nachtrag I	244 pp.	Dresden	1938
Nachträge und Erg. v. I	287 pp.	Stuttgart	1954
	927 pp.	Stuttgart	1953
8th ed. Nachträge II.	294 pp.	Stuttgart	1956

Grossherzoglich Badische Medicamententaxe			
Jahr 1842	68 pp.	Karlsruhe	1846
Jahr 1853	72 pp.	Karlsruhe	1853
Jahr 1856	80 pp.	Karlsruhe	1843
Jahr (See R D-B 134)			
Jahr 1863	72 pp.	Karlsruhe	1863
Gutachtliche Aeussderung auf die seitens des Herrn Reichskanzlers bezüglich. Revision der Pharmacopoea Germanica by Bruno Hirsch	44 pp.	Frankfurt	1879
Klinische Pharmacopöe by Wilhelm Frederich Müller	128 pp.	Stuttgart	1875
Kritische und Practische Notizen zur Pharmacopoea Germanica by Ernst Biltz	260 pp.	Erfurt	1878
Pharmacologia by J. P. Vogler	204 pp.	Giessae	1801
Pharmacopoea Extemporanea by F. L. Augustin	300 pp.	Berolini	1809
2nd ed. enl.	352 pp.	Berolini	1822
Pharmacopoea Germaniae	393 pp.	Halis Saxonum	1865
Appendix	24 pp.	Halis Saxonum	1867
2nd ed.	390 pp.	Halis Saxonum	1867
Pharmacopoea Germanica	442 pp.	Berolini	1872
2nd ed. (German)	356 pp.	Berlin	1882
2nd ed. (Latin)	354 pp.	Berolini	
Pharmacopoea Germanica, Deutsche Pharmakopöe by H. Hager	454 pp.	Berlin	1872
Pharmacopoea Germanica, The German Pharmacopoeia, trans. by C. L. Lochman			
Am. ed.	382 pp.	Philadelphia	1873
Am. ed. 2nd ed.	295 pp.	New York	1884
Pharmacopoea Spagyrica—Ander Theil by J. R. Galuber	141 pp.	Amsterdam	1656
Pharmacopoeia Augustana			
A facsimile of the first edition of the Pharmacopoeia Augustana with introductory essays by Theodore Husemann. The State Historical Society of Wisconsin. Hollister Pharmaceutical Library Publ. No. 1			
	261 pp.	Madison	1927
Pharmacopoeia Medico-Chymica by Johannes Schröder	326 pp.	n.p.	1644
4th ed.	742 pp.	Lugduni	1656
Synoptische Tabellen zu F. Ph. Dulk's Preuss. Pharmacopöe	40 pp.	n.p.	n.d.
Tabula Smaragdina Medico Pharmaceutica by P. Fraudorffer	468 pp.	Norimbergae	1726
	208 pp.	Venetiis	1754
Taxa Seu Pretium Juxta Pharmacopoeam Wirtenbergicam	30 pp.	Stuttgartardiae	1775
		Württemberg	
Deutsches Dispensatorium oder Allgemeines Apothekerbuch by J. H. Pfungsten	2 vols.	Frankfurt und Leipzig	1783
Dispensatorium Fuldense Tripartitum Tam Patriae Usibus	326 pp.	Frankfurti ad Moenum	1741
Dr. John Quincy's Pharmacopoeia Officialis et Extemporanea (German from 15th London ed. by A. M. Birkholz)			
vol. 1	356 pp.	Leipzig	1784
vol. 2	678 pp.	Leipzig	1785
Neues Verbessertes Dispensatorium oder Arzneibuch			
German ed. v. 1	600 pp.	Hamburg	1768
German ed. v. 2	952 pp.	Hamburg	1772

Pharmacopœia Londinensis:
 OR, THE *OLD*-*C968*
 London Dispensatory

FURTHER
 Adorned by the *Studies* and
Collections of the *Fellows* now living, of
 the said *COLLEGE*.

In this Impression you may find,

1. Three hundred Usefull Additions.
2. All the Notes that were in the Margent are brought into the Book between two such Crotchets as these []
3. The Vertues, Qualities, and Properties of every *Simple*.
4. The Vertues and Use of the *Compounds*.
5. Cautions in giving all Medicines that are dangerous.
6. All the Medicines that were in the *Old Latin Dispensatory*, and are left out in the *New Latin* one, are printed in this Impression in English, with their Vertues.
7. A *KEY* to *Galen* and *Hippocrates* their *Method of Physick*, containing Thirty three Chapters.
8. In this Impression, the *Latin* name of every one of the *Compounds* is printed, and in what Page of the new folio *Latin* Book they are to be found.

By *Nich. Cupeper*, Gent. Student in Physick and Astrology.

London, Printed by John Streater, 1667.

FIG. 3. Title page of *Pharmacopœia Londinensis*. London, 1667.

Die Officinellen Drogen und Ihre Präparate by J. Rabow			
	234 pp.	Strassburg	1903
Pharmakopöe für das Königreich Württemberg			
new ed.	486 pp.	Stuttgart	1847
Pharmacopoea Wirtenbergica			
2nd ed. enl.	144+44 pp.	Stuttgardiae	1750
3rd rev. & enl.	144+232+44 pp.	Stuttgardiae	1754
New enl.	232+44+66 pp.	Stuttgardiae	1760
Ed. nova rev.	156+252+48 pp.	Stuttgardiae	1771
Ed. nova	176+341 pp.	Lousanne Helvetiorum	1785
Ed. nova	230+66+40 pp.	Stuttgardiae	1786
6th ed. enl.	132+224 pp.	Stuttgardiae	1798
Pharmacopoea Wirtembergicae Novae			
part 1	71 pp.	Stuttgardiae	1845
part 2	239 pp.	Stuttgardiae	1845
Pharmacopoeia Augustana Reformata	640+112 pp.	Norimbergae	1693
Pharmacopoeia Regia, Seu Dispensatorium Novum	582 pp.	Locupletatum Norimbergae	1693
Baden			
Pharmacopoea Badensis			
	353 pp.	Heidelbergae	1841
	352 pp.	Heidelbergae	1842
Pharmacopoea Medicaminum, quae in Pharmacopoea Badensi Non Recepta			
Sunt by E. A. Emillio Riegel	183 pp.	Carlsruhae	1854
Hamburg			
Codex Medicamentarius Hamburgensis			
	377 pp.	Hamburgi	1835
2nd ed.	501 pp.	Hamburgi	1845
3rd ed.	508 pp.	Hamburgi	1852
Hamburgische Pharmakopöe	1845		
	206 pp.	Leipzig	1845
Lippe			
Lippisches Dispensatorium by J. C. F. Scherf (German)			
Vol. 1	450 pp.	Lemgo	1799
Vol. 2	502 pp.	Lemgo	1801
Palatinate			
Dispensatorium Medico-Pharmaceuticum—A Concilio Medico Electorali Palatino			
	208+48 pp.	Manhemii	1764
Schleswig-Holstein			
Pharmacopoea Slesvico-Holsatica by C. H. Pfaff			
	503 pp.	Kiliae	1831
Pharmakopöe für Schleswig und Holstein 1831, nebst den Nachträgen bis 1843			
German ed.	179 pp.	Leipzig	1844
Strassburg			
Pharmacopoea de Bauderon, Deutsche Apoteck Darinnen Alle Vermischte Artzneyen trans.			
	677 pp.	Strassburg	1595
Pharmacopoea Oeconomica, Elsass-Lothringische Arzneitaxe by W. de Bary and E. Moser			
	65 pp.	Strassburg	1896
Pharmacorum Simplicium, res Medicae by P. Dioscorides			
	361 pp. (only one-side of page numbered) and index Argentorato		1529

Bavaria

Baierische Pharmacopœe—German mit Anmerkungen von A. Sterler			
vol. 1	1024 pp.	München	1822
vol. 2	1218+186 pp.	München	1822
Bayerische Pharmacopœe			
	150+168 pp.	München	1823
Pharmacopœe für das Königreich Bayern			
Newly revised	377 pp.	München	1856
2nd ed.	345 pp.	München	1859

Augsburg

Conspectus Materiae Medicae Selectioris—Pharmacopolis Ratisbonensibus			
	128 pp.	Ratisbonae	1727
Pharmacopoea Augustana Renovata			
	28+324+40 pp.	Augustae Vindelicorum	1690
	28+324+40 pp.	Augustae Vindelicorum	1710
Pharmacopoea Augustana Renovata et Aucta			
	337+47 pp.	Augustae Vindelicorum	1684
	337+47 pp.	Augustae Vindelicorum	1694
Pharmacopoea Augustana Renovata, Revisa et Appendice			
	326+40 pp.	Augustae Vindelicorum	1734
Pharmacopoea Bavarica Jussu Regio Edita			
	332 pp.	Monachii	1822
Pharmacopoeia Seu Medicamentarium pro Rep. Augustana			
	386 pp.	Augustae Vindelicorum	1851
Pretium Medicamentorum—in officinis Pharmaceuticis Ratisbonensibus			
Venarium	41 pp.	Ratisbonae	1727

Saxony

Pharmacopoea Saxonica			
	420 pp.	Dresdae	1820
Suppl.	120 pp.	Dresdae	1830
Denuo ed.	296 pp.	Dresdae	1837

Hospitals

Uebersicht der Halleschen Waisenhaus-Arzneien by D. Weber			
	103 pp.	Halle a.S.	1886
Pharmacologia Nosocomiorum—German			
	244 pp.	Stuttgart	1801
Pharmacopoea Pauperum in usum Instituti Clinici Hamburgensis			
1st ed.	71 pp.	Hamburgi	1781
	83 pp.	Hamburgi	1804
2nd ed.	48 pp.	Hamburgi	1785
Pharmacopoea ad Pauperes Curandos Accomodata—in usum Policlinicae Lipsiensis by Ludovicus Cerutti ed.			
	70 pp.	Lipsiae	1829
Armen-Pharmakopœe by C. W. Hufeland			
3rd ed.	84 pp.	Berlin	1818
5th ed.	75 pp.	Berlin	1828
6th ed.	79 pp.	Berlin	1829
7th ed.	84 pp.	Berlin	1832
8th ed.	84 pp.	Berlin	1834
Pharmacopoea Clinica—Armen-und Hospital-Praxis			
4th ed.	77 pp.	Erlangen	1883
Pharmacopoea Clinica-Oeconomica—Armen-und Hospital-Praxis by H. V. Ziemssen			
3rd ed.	57 pp.	Erlangen	1877

Prussia

Anhang zur Preussischen Pharmacopœe by Phil. Friedr. Dulk			
4th ed.	179 pp.	Leipzig	1830

Arzneien Taxe	46 pp.	Dresden	1830
Suppl.	22 pp.	Dresden	1832
Dispensatorium Fuldense, tripartitum by F. A. Schelereth			
2nd ed.	326 pp.	Frankfurt	1791
Dispensatorium Regium et Electorale Borusso-Brandenburgicum			
4th ed.	210+28 pp.	Erfordia	1747
Denuo ed.	44+139 pp.	Berolini	1781
Dispensatorium Regium et Electorale Borusso-Brandenburgicum			
	230 pp.	Erfordia	1758
Formulae Remediorum by Franc. X. Hartmann			
	632 pp.	Lipsiae	1771
	8+472 pp.	Lovanii	1772
Hannoversche Pharmacopoe by M. Gruner			
	362 pp.	Hannover	1820
Manuale Pharmaceuticum—in Recentioribus Pharmacopoeis by G. F. Baersprung			
	122 pp.	Lipsiae	1824
Methodus Praescribendi Formulas Remediorum by P. Morelli			
	252 pp.	Lipsiae	1654
Neues Deutsches Apothekerbuch nach der letzten Ausgabe der Preussischen Pharmacopoe by A. F. L. Dörrfurt			
1st ed.	960 pp.	Leipzig	1801
2nd ed. 1st pt.	964 pp.	Leipzig	1803
2nd ed. 2nd pt.	2000 pp.	Leipzig	1804
2nd ed. 3rd pt.	3043 pp.	Leipzig	1806
3rd ed.	628+124 pp.	Leipzig	1812
Pharmacopoea Borussica			
	216 pp.	Berolini	1799
2nd ed.	216 pp.	Frankfurt et Lipsiae	1801
2nd ed.	207 pp.	Berolini	1804
3rd ed.	208 pp.	Berolini	1813
4th ed.	387 pp.	Berolini	1827
Pharmacopoea Borussica, Die Preussische Pharmakopoe by P. F. Dulk			
1st ed. 2 v.	924+921 pp.	Leipzig	1828-29
2nd ed. 2 v.	1036+932 pp.	Leipzig	1829-30
2nd ed. 2 v. enl.	1036+932 pp.	Reutlingen	1833
3rd ed. 2 v.	1085+975 pp.	Leipzig	1833-34
4th enl. ed. 2 vol.	1171+1074 pp.	Leipzig	1839-39
5th ed. 2 v.	802+918+79 pp.	Leipzig	1847-48
Pharmacopoea Borussica oder Preussische Pharmacopoe by C. W. Juch			
from the Latin	378 pp.	Nurnberg	1805
2nd ed.	378 pp.	Nurnberg	1808
3rd ed.	410 pp.	Nurnberg	1817
4th ed.	516 pp.	Nurnberg	1830
Pharmacopoea Borussica			
4th ed. Appendix	54 pp.	Berolini	1829
5th ed.	418 pp.	Berolini	1829
6th ed.	312 pp.	Berolini	1846
7th ed.	260 pp.	Berolini	1862
Pharmacopoea Hannoverana			
	396 pp.	Hannoverae	1819
Pharmacopoea Hannoverana Nova			
	400 pp.	Hannoverae	1833
Pharmacopoea Hannoverana			
	784 pp.	Hannover	1861
Pharmacopoea Hassiae Electoralis			
	492 pp.	Cassellis	1827
Preise von Arzneimitteln—7. Ausg. d. Preussischen Landes-Pharmacopoe für 1869 (Schacht & Laux)			
	63 pp.	Berlin	1869
(Laux & Kobligk)	64 pp.	Berlin	1872
Taxe der Arzneimittel, Pharmacopoea Borussica ed. VII u. Pharmacopoea Germanica ed. I.			
	48 pp.	Freiburg	1869

PHARMACOPŒA PERSICA

EX IDIOMATE PERSICO
in Latinum conversa.

تفسیر مرکبات قرابادین پارسی
دست قرابان حق حضرت ایسوع
راهب تابع حضرات ایلدیا و طریاء
بادری انجلوس کرملیط طلوزانی

OPUS

MISSIONARIIS, MERCATORIBUS,
*ceterisque Regionum Orientalium Lustratoribus neces-
sarium; nec non Europæis Nationibus perutile.*

ACCEDUNT IN FINE

*Specimen notarum in Pharmacopœam Persicam; tum indices
duo; alter Pharmaceuticus, compositiones in hoc opere
contentas indigitans; alter pathologicus, remedia
ad singulos morbos ostendens.*



LUTETIÆ PARISIORUM,
Typis STEPHANI MICHALLET, ad insigni-
Sancti Pauli, viâ Jacobæâ.

M. DC. LXXXI.

CVM PRIVILEGIO REGIS.

FIG. 4. Title page of *Pharmacopœa Persica*. Paris, 1681.

Preussische Pharmakopöe by L. A. Kraus			
	308 pp.	Braunschweig	1805
3rd ed.	272 pp.	Berlin	1813
4th ed.	423 pp.	Berlin	1827
5th ed.	443 pp.	Berlin	1829
6th ed. by Dr. Gurlt	312 pp.	Berlin	1847
7th ed. by G. A. Völcker	271 pp.	Berlin	1862
7th ed. by L. Posner	66 pp.	Berlin	1863
Systema Materiae Medicae by J. Jacob	156 pp.	Lipsiae	1654
Supplementum Pharmacopoea Borussica Hamburgense	230 pp.	Hamburgi	1868
Military			
Pharmacopoea Castrensis Borussica			
2nd ed. J. A. Reimer	70 pp.	Berolini	1791
3rd ed. J. A. Reimer	76 pp.	Berolini	1794
	68 pp.	Berolini	1805
3rd ed.	72 pp.	Vratislaviae	1813
Pharmacopoea Militaris Borussica			
	78 pp.	Berolini	1841
4th ed.	59 pp.	Berolini	1868
GREAT BRITAIN			
Aanhangsel tot de Nieuwe Britische Apotheek by J. Rutty			
(Dutch by Van Brussel)	64 pp.	Amsterdam	1778
British Pharmaceutical Codex			
New & revised ed.	1669 pp.	London	1923
	1768 pp.	London	1934
	1562 pp.	London	1949
British Pharmaceutical Codex 1949 Supplement 1952	148 pp.	London	1952
British Pharmacopoeia			
1st ed.	476 pp.	London	1864
2nd ed.	434 pp.	London	1867
Additions to the British Pharmacopoeia of 1867			
Suppl.	26 pp.	London	1874
British Pharmacopoeia—1867			
2nd reprint	434 pp.	London	1874
Additions to the British Pharmacopoeia of 1867			
	22 pp.	London	1874
British Pharmacopoeia—1885			
3rd Supp.	536 pp.	London	1885
Reprint	536 pp.	London	1888
Reprint	536 pp.	London	1891
British Pharmacopoeia—1898			
4th ed.	535 pp.	London	1898
Indian and Colonial Addendum to the British Pharmacopoeia 1898			
Supp.	59 pp.	London	1900
British Pharmacopoeia—1914			
5th ed.	602 pp.	London	1914
6th ed.	713 pp.	London	1932
Addendum 1936 to the British Pharmacopoeia 1932			
	132 pp.	London	1936
Sixth Addendum	41 pp.	London	1943
Seventh Addendum	105 pp.	London	1945
British Pharmacopoeia—1948			
	914 pp.	London	1948
Addendum	114 pp.	London	1951
Codex Medicamentarius Britanniae sive Formulae in Codex Medicamen-			
tarius Europaeus, Sectio 1			
2nd ed.	128+140 pp.	Lipsiae et Soraviae	1821-22

Complete Extemporaneous Dispensatory by H. A. Gaubius, trans. from the Latin Original			
	432 pp.	London	1741
Dispensatory of the Royal College of Physicians, London by John Quincy			
	362 pp.	London	1721
Dispensatory of the Royal College of Physicians, London, trans. by H. Pemberton			
1st ed.	419 pp.	London	1746
3rd. ed.	414 pp.	London	1751
4th ed.	414 pp.	London	1760
Dispensatory, or Commentary on the Pharmacopoeias of Great Britain by Robert Christison			
	978 pp.	Edinburgh	1842
2nd rev. ed.	1008 pp.	Edinburgh	1848
2nd rev. with supp.	1008 pp.	Philadelphia	1848
Doron Medicum: or, A supplement to the New London Dispensatory, in III books by W. Salmon			
	720 pp.	London	1783
Extra Pharmacopoeia of Unofficial Drugs and Chemicals and Pharmaceutical Preparations by W. Martindale & W. W. Westcott			
	313 pp.	London	1883
2nd ed.	330 pp.	London	1884
3rd ed.	330 pp.	London	1884
4th ed.	416 pp.	London	1885
7th ed.	524 pp.	London	1892
9th ed.	626 pp.	London	1898
10th ed.	688 pp.	London	1901
11th ed.	809 pp.	London	1904
12th ed.	1045 pp.	London	1906
13th ed.	1164 pp.	London	1908
17th ed. vol. 1	115 pp.	London	1920
20th ed. vol. 2	889 pp.	London	1935
21st ed. vol 1	1182 pp.	London	1936
22nd ed. vol 1	1289 pp.	London	1941
22nd ed. vol 2	1217 pp.	London	1943
22nd ed. vol 1-Supp.	48 pp.	London	1943
23rd ed. vol 1	1352 pp.	London	1952
23rd ed. vol. 2	1501 pp.	London	1955
General Dispensatory by R. Brooks			
2nd ed. enl.	388 pp.	London	1765
Gray's Supplement to the Pharmacopoeia			
Rev. & enl.	1118 pp.	London	1847
2nd ed.	1070 pp.	London	1848
Guide to the New Pharmacopoeia, 1885 by Prosser James			
2nd ed.	119 pp.	London	1885
London Dispensatory by Anthony Todd Thomson			
	793 pp.	London	1811
	793 pp.	London	1814
New ed.	962 pp.	London	1824
4th ed.	1072 pp.	London	1826
5th ed.	1071 pp.	London	1830
6th ed.	1096 pp.	London	1831
7th ed.	1110 pp.	London	1833
8th ed.	1110 pp.	London	1836
9th ed.	1164 pp.	London	1837
10th ed.	1317 pp.	London	1844
London Pharmacopoeia—Companion to, by G. F. Collier			
	192 pp.	London	1939
Mystery about the first English (London) Pharmacopoeia (1618), American Institute of the History of Pharmacy, Madison, Wisconsin 1942 by George Urdang			
New Dispensatory			
	664 pp.	London	1753
2nd ed. rev. & enl.	692 pp.	London	1765
3rd ed. rev. & enl.	692 pp.	London	1770

New Dispensatory by W. Lewis			
5th ed.	688 pp.	London	1785
6th ed.	606 pp.	London	1799
New London Dispensatory by Thomas Cox			
	351+30 pp.	London	1824
New London Pharmacopoeia by Peter Squire			
	174+25 pp.	London	1851
New Pharmacopoeia of the Royal College of Physicians of London, trans. by T. Healde			
3rd ed. corr.	368 pp.	London	1788
New Pharmacopoeia of the Royal College of Physicians of London, trans. with notes by G. F. Collier			
	231 pp.	London	1840
New Supplement to the Pharmacopoeias of London, Edinburgh, Dublin & Paris by James Rennie			
3rd ed. rev. & enl.	480 pp.	London	1833
New Supplement to the Latest Pharmacopoeias of London, Edinburgh, Dublin and Paris			
4th ed. rev. & enl.	480 pp.	London	1837
Nieuwe Britsche Apotheek			
Eerste Stuk I en II			
Deel	260 pp.	Amsterdam	1772
Tweede Stuk II en Iv			
Deel	678 pp.	Amsterdam	1773
Pharmacopoeia Londinensis of 1618, reproduced in facsimile with a historical introduction by George Urdang. State Historical Society of Wisconsin.			
	299 pp.	Madison	1944
Pharmacopoea Londinensis			
2nd ed. v. 1	128 pp.	Lipsiae & Soraviae	1821
In Codex Medicamentarius Europaeus, Sectio I.			
Pharmacopoea Domestica: or, the Family Dispensatory by Thomas Fuller			
	231 pp.	London	1739
Pharmacopée du College Royal des Medecins de Londres by H. Pemberton			
Vol. 1	148+415 pp.	Paris	1761
Vol. 2	781 pp.	Paris	1771
	430 pp. (Latin-Francais)	Paris	1837
Pharmacopoeia, London County Council			
	279 pp.	London	1936
Pharmacopoeia Bateana by W. P. Salmon			
2nd ed.	747 pp.	London	1700
3rd ed.	747 pp.	London	1706
5th ed.	744 pp.	London	1720
	130+12+16 pp.	Amstelodami	1688
	337 pp.	Venetis	1703
	240 pp.	Lugduni	1734
	248 pp.	Lovanii	1752
Pharmacopoeia Collegii Londinensis			
	454 pp.	Londini	1680
Pharmacopoeia Collegii Medicorum Londinensis			
	188 pp.	Londini	1763
	167 pp.	Londini	1788
Pharmacopoeia Collegii Regalis Medicorum Londinensis			
	174 pp.	Londini	1746
	174 pp.	Amstelodami	1746
	156 pp.	Londini & Rotterodami	1788
	156+23 pp.	Londini	1809
Ed. nova	116 pp.	Lugduni-Batavorum	1788
	188 pp.	Londini	1757
	134+40 pp.	Frankofurti ad Moenum	1761
	134+40 pp.	Frankofurti et Lipsiae	1762
	182 pp.	Londini	1788
Ed. alt.	215 pp.	Londini	1815



FIG. 5. Frontispiece of *Pharmacopoeia Augustana Renovata*. Augsburg, 1694.

Pharmacopoeia Collegii Regalis Medicorum Londinensis (<i>Continued</i>)			
Ed. alt.	198 pp.	Londini	1817
	160 pp.	Londini	1824
	216 pp.	Londini	1836
	208 pp.	Londini	1836
	215 pp.	Londini	1851
trans. by D. Spillan	308 pp.	Londini	1837
Pharmacopoeia Collegii Regalis Medicorum Londinensis 1809.			
Half title Pharmacopoeia Dublinensis			
Ed. altera	148 pp.	Lipsiae et Soraviae	1821
Pharmacopoeia Collegii Regalis Medicorum Londinensis 1746			
	141 pp.	Francofurti ad Moenum	1748
Pharmacopoeia Extemporanea by Thomas Fuller			
2nd ed.	512 pp.	London	1714
5th ed.	340 pp.	Londini	1714
6th ed.	40+342 pp.	Londini	1731
3rd Voneta ed.	398 pp.	Venetiiis	1753
Pharmacopoeia Imperialis, sive Pharmacopoeiae Londinensis, Edinburgensis et Dublinensis			
2nd ed.	255 pp.	Londini	1823
Pharmacopoeia Londinensis by Nicholai Culpeper			
	325 pp.	London	1653
	305 pp.	London	1667
	305 pp.	London	1672
	305 pp.	London	1679
	305 pp.	London	1683
	369 pp.	London	1718
Pharmacopoeia Londinensis Collegarum			
Facismile of May 7, 1618 ed. 1st issue			
	212 pp.	Londini	1650
Pharmacopoeia Londinensis: or the New London Dispensatory, trans. by W. Salmon			
2nd ed.	877 pp.	London	1682
8th ed.	796 pp.	London	1716
Pharmacopoeia Londinensis Remedia by J. S. Cura			
	141 pp.	Londini	1878
Pharmacopoeia Meadiana			
2nd ed. pt. 1-6	+108 pp.	London	1757
2nd ed. pt. 2-8	+106 pp.	London	1757
2nd ed. pt. 3-8	+ 86 pp.	London	1758
Extra title page of Vol. for pts. 1-3 dated 1758			
Pharmacopoeia of the Royal College of Physicians of London, trans. by T. Healde			
7th ed. rev.	390 pp.	London	1796
Pharmacopoeia of the Royal College of Physicians, 1809 Trans. by G. F. Collier			
	231 pp.	London	1821
Pharmacopoeia of the Royal College of Physicians of London, trans. by R. Powell			
1st ed.	478 pp.	London	1809
2nd ed. cor. & enl.	450 pp.	London	1809
Pharmacopoeia of the Royal College of Physicians of London, trans. into English by G. L. Tuthill			
	205 pp.	London	1824
Pharmacopoeia of the Royal College of Physicians of London for 1851, trans. into English by a Physician			
	229 pp.	London	1851
Pharmacopoeia of the Royal College of Physicians of London, 1851, newly translated			
5th ed.	86 pp.	London	1854
	86 pp.	London	1855
6th ed.	86 pp.	London	1856

Pharmacopoeia Officinalis and Extemporanea by John Quincy			
3rd. ed.	621 pp.	London	1719
5th ed. rev. & enl.	674 pp.	London	1724
6th ed. rev. & enl.	700 pp.	London	1726
9th ed. rev. & enl.	700 pp.	London	1733
10th ed. rev. & enl.	700 pp.	London	1736
11th ed. rev.	700 pp.	London	1739
12th ed. rev. & enl.	700 pp.	London	1742
12th ed. rev. & enl.	256+504 pp.	London	1749
13th ed. rev.	704 pp.	London	1761
Pharmacopoeia Radcliffeana by Johannes Radcliffe			
3rd ed.	595 pp.	London	1718
Pharmacopoeia Reformata			
	292 pp.	London	1744
Pocket Pharmacopoeia by Hudson F. Cox and John Stokes			
	206 pp.	London	1899
Practical Dispensatory—Dr. Radcliffe's by Edward Strother			
	477 pp.	London	1720
Practitioner's Pharmacopoeia by John Foote			
	368 pp.	London	1855
	390 pp.	New York	1855
Prescriber's Pharmacopoeia by T. F. Cook			
3rd Amer. rev. ed. from 4th London ed.	178 pp.	New York	1853
Prescriber's Pharmacopoeia			
6th ed.	108 pp.	London	1886
Prescriber's Pharmacopoeia for General use			
2nd ed.	30 pp.	London	1913
Translation of the Pharmacopoeia of the Royal College of Physicians of London, by R. Phillips			
	326 pp.	London	1824
2nd ed.	313 pp.	London	1831
2nd ed.	421 pp.	London	1837
3rd ed.	444 pp.	London	1838
4th ed.	456 pp.	London	1841
5th ed.	456 pp.	London	1848
5th ed.	567 pp.	London	1851
Bristol			
Pharmacopoeia in usum Nosocomii Regalis Bristolensis Accomodate			
	92 pp.	Bristoliae	1858
London			
Clinical Pharmacopoeia by William Nisbet			
	377 pp.	London	1800
Formulae Medicamentorum quae in praxi sua medica apud dispensatorium Generale Westmonasteriense, by A. B. Granville			
	16 pp.	London	1819
Formulae used at St. John's Hospital for Diseases of the Skin			
	48 pp.	London	1891
Modern Practice of the London Hospitals			
2nd ed.	201+22 pp.	London	1766
3rd ed.	226+22 pp.	London	1770
Pharmacopoeia for Diseases of the Skin			
4th ed.	53 pp.	London	1896
Pharmacopoeia in use at the male and out-patient department of the London Lock Hospital			
	37 pp.	London	1886
Pharmacopoeia in usum Nosocomii a Thoma Guy, Armigero			
	197 pp.	Londini	1837
Pharmacopoeia in usum Nosocomii dicti the London Hospital			
	101 pp.	Londini	1853
Pharmacopoeia Nosocomii Londinensis in Curam Morborum Cutaneorum			
2nd ed.	48 pp.	Londini	1853

Pharmacopoeia Nococomii Middlesexensis	47 pp.	Londini	1844
Pharmacopoeia Nosocomii Regalis Ophthalmici Londinensis			
3rd ed.	27 pp.	Londini	1853
4th ed.	36 pp.	Londini	1861
Pharmacopoeia Nosocomii Regalis Sancti Bartholomaei			
	84 pp.	Londini	1799
	35 pp.	Londini	1838
	45 pp.	Londini	1861
Pharmacopoeia of King's College Hospital			
	30 pp.	London	1855
	31 pp.	London	1869
Pharmacopoeia of the Royal Free Hospital			
	40 pp.	London	1873
Pharmacopoeia of the Royal London Ophthalmic Hospital			
5th ed.	32 pp.	London	1868
6th ed.	48 pp.	London	1879
Pharmacopoeia of the Samaritan Free Hospital for Women and Children			
	31 pp.	London	n.d.
Pharmacopoeia or Diseases of the Skin			
5th ed.	64 pp.	London	1903
Pharmacopoeia Pauperum: or, The Hospital Dispensatory—Hospitals of London			
	108 pp.	London	1718
Pharmacopoeia Pauperum, quam in usum Nosocomii Regalis Metropolitani, ad morbos Puerorum Debellandos			
	32 pp.	Londini	1820
Pharmacopoeia, Quam in Usu Nosocomii Academiae Londinensis			
	40 pp.	Londini	1828
Pharmacopoeias of Seventeen of the London Hospitals by Peter Squire			
2nd ed.	199 pp.	London	1869
Pharmacopoeias of Twenty-Five of the London Hospitals by Peter Squire			
4th ed.	312 pp.	London	1879
5th ed.	317 pp.	London	1885
Pharmacopoeias of Twenty-Nine of the London Hospitals, by Peter Squire			
6th ed.	332 pp.	London	1891
Pharmacopoeia Nosocomii Regalis Sancti Thomae, 1867			
	31 pp.	Londini	1867
Pharmacopoeia of the Hospital for Diseases of the Throat—Mackenzie			
1st ed.	94 pp.	London	1872
2nd ed.	100 pp.	London	1873
3rd ed.	112 pp.	London	1876
4th ed.	150 pp.	London	1881
Pharmacopoeia of the Hospital for Diseases of the Throat, Nose and Ear, by H. L. Lack and C. A. Parker			
6th ed.	75 pp.	London	1901
7th ed. by C. A. Parker and T. J. Faulder			
	62 pp.	London	1914
Pharmacopoeia of the Charing Cross Hospital			
	32 pp.	London	1876
Pharmacopoeia of the Hospital for Sick Children, London			
	22 pp.	Bloomsbury London	n.d.
Pharmacopoeia of the London Hospital			
	117 pp.	London	1868
Pharmacopoeia of St. Mary's Hospital, London			
	48 pp.	London	1869
	104 pp.	London	1889
Pharmacopoeia of St. Thomas's Hospital			
	36 pp.	London	1895
Pharmacopoeia of the City of London Hospital for Diseases of the Chest, Victoria Park			
	51 pp.	London	1878
Pharmacopoeia of the Great Northern Hospital, London			
Rev.	39 pp.	London	1882

Pharmacopoeia of the Evelina Hospital for Sick Children			
3rd ed.	62 pp.	London	1906
Pharmacopoeia of the London Hospital for Diseases of the Skin, by James Sartin ed.			
3rd ed.	42 pp.	London	1858
Pharmacopoeia of the Parochial Infirmary of St. Marylebone	53 pp.	London	1843

Manchester

Pharmacopoeia of the Manchester Royal Infirmary			
12th ed.	125 pp.	Manchester	1933

GREECE

Ellenike Pharmakopoiia			
	536 pp.	Smyrne	1835
2nd ed.	620 pp.	Athens	1924
Ellenike Pharmakopoiia—(Pharmacopoea Graeca) by J. Bouro, X. Landerer, and J. Sartori			
	542 pp.	Athenis	1837
Handbook of Pharmacology by N. Koste (in Greek)	1151 pp.	Athens	1855

GUATEMALA

The French Pharmacopoeia is used in Guatemala.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

HAITI

The French Pharmacopoeia is used in Haiti.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

HONDURAS

The French Pharmacopoeia is used in Honduras.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.
The United States Pharmacopoeia is used in Honduras.
See American Journal of Pharmacy v. 122, p. 231, 1950.

HUNGARY

Pharmacopoeia Hungarica			
4th ed.	435 pp.	Budapestini	1934

INDIA

The British Pharmacopoea is official in India.			
Assam Pharmacopoeia and Prescriber's Companion by C. W. Carr-Calthrop			
2nd ed.	57 pp.	Shillong	1907
Bengal Dispensatory and Pharmacopoeia by W. B. O'Shaughnessy			
	794 pp.	Calcutta	1841
Bengal Pharmacopoeia by W. B. O'Shaughnessy			
	453 pp.	Calcutta	1844
Indian & Colonial Addendum, 1898			
	59 pp.	London	1900
Indian Pharmaceutical Codex by B. Mukerji			
v. 1.	431 pp.	New Delhi	1953
Pharmacopoeia of India			
	502 pp.	London	1868
Pharmacopoeia of the Medical College Hospital			
Rev. ed.	76 pp.	Calcutta	1909
Prescribers' Pharmacopoeia—Kemp & Co.			
2nd ed. rev. rep.	429 pp.	Bombay	1891
3rd ed.	427 pp.	Bombay	1896
Supplement to the Pharmacopoeia of India by Moodeen Sheriff			
	676 pp.	Madras	1869

IRELAND

The British Pharmacopoea is official in Ireland.			
Pharmacopoeia Collegii Medicorum Regis et Reginae in Hibernia			
	296 pp.	Dublinii & Londini	1826

Pharmacopoeia Dublinensis			
2nd ed. v. 2	148 pp.	Lipsiae & Soraviae	1822
In Codex Medicamentarius Europaeus, Sec. 1. v. 2			
Pharmacopoeia of the King and Queen's College of Physicians in Ireland	191 pp.	Dublin	1850

ITALY

Elenco di Specialita Medicinali—Ministero dell' Interno Direzione Generale Della Sanita Publica, Rome, Italy	77 pp.	Roma	1920
Farmacopea ad uso degli Speciali, e Medici Moderni d'Italia by L. Brugnatelli	208 pp.	Venezia	1803
Farmacopea Ferrarease by A Campana			
5th ed.	328 pp.	Firenze	1808
14th ed.	420 pp.	Firenze	1830
20th ed. v. 1	521 pp.	Firenze	1840
Farmacopea Italiana Ossia Dizionario di Farmacia e di Terapeutica by G. Galo & G. Morelli			
V. 1	718 pp.	Torino	1881
V. 2	1150 pp.	Torino	1882
Suppl.	520 pp.	Torino	1887
Mesure Vulgare—della Consolatione de le Medicine Simplici solutive by Joannis Mesue, Jr. (97 pp. printed leaves)		Venice	1493
(One of earliest pharmaceutical works printed.)			
Pharmacopea Tubalense Chimico—Galencia by Manuel Rodrigues Coelho	916 pp.	Roma	1760
Pharmacopea Ufficiale del Regno d'Italia	439 pp.	Torino	1892
2nd ed.	413 pp.	Roma	1902
4th ed.	524 pp.	Roma	1930
5th ed.	717 pp.	Roma	1929
6th ed.	631 pp.	Roma	1952
Farmacopea ad Uso dello Spedale di Pammatone di Genova	45 pp.		n.d. (1807?)
Nuova Farmacopea, Conto Reso della Compilazione d'una per Use dell' Ospedale di Pammatone in Genova nell' anno 1807, by W. Batt	47 pp.	Genova	1808
Pharmacopée pur les Etats Sardes	374 pp.	Turin	1853

JAMAICA

The British Pharmacopoeia is used in Jamaica.
See American Journal of Pharmacy v. 122, p. 231, 1950.

JAPAN

Pharmacopoeia of Japan			
3rd rev. ed. (English)	424 pp.	Tokyo	1907
4th rev. ed. (English)	476 pp.	Tokyo	1922
Pharmacopoeia Japonica (Nippon Yakkyoku-ho)			
6th ed. (Japanese)	756 pp.	Tokyo	1951

JUGOSLAVIA

Hrvatsko-Slovenska Farmakopoea. Pharmacopoea Croatica-Slavonica	718 pp.	Zagreb	1888
Farmakopeja Fnrj, Pharmacopoea Jugoslavica			
2nd ed. Ph. Jug. II	976 pp.	Beograd	1951
Pharmacopoea Jugoslavica, 1933—Jugoslavenska Farmakopeja 1933	820 pp.	Beograd	1934
Pharmakopoea Serbica			
2nd ed.	330 pp.	Belgrad	1926

MEXICO

Farmacopoea Nacional			
1st ed.	808 pp.	Mexico	1930
Nueva Farmacopoea Mexicana de la Sociedad Farmaceutica Mexicana			
5th ed.	1495 pp.	Mexico	1925

NETHERLANDS

Aanteenkeningen op het Systematischen Pharmacognostisch-Botanische Gedeelte der Pharmacopoea Neerlandica by C. A. J. A. Oudemans	661+27+31 pp.	Rotterdam	1854-56
Apotheek der Oostenrijksche Staaten—(Opgesteld door A. Baron van Störch)—N. J. de Jacquin & J. J. de Well	309 pp.	Rotterdam	1780
Bataafsche Apotheek	384+10 pp.	Amsterdam	1807
Dispensatorium seu Pharmacorum Conficiendorum Ratio by Valerius Cordus	508 pp.	Lugd. Batavorum	1652
De verbeterde Haarlemmer Apotheek by A. Bôgaart	142 pp.	Amsterdam	1702
4th ed.	156 pp.	Amsterdam	1735
Formularium—in de Pharmacopoea Neerlandica			
Editio altera	278 pp.	'S Gravenhage	1881
Geneesmiddelen der Nederlandsche Pharmacopee by K. Verlaan			
3rd ed. Deel 1	388 pp.	'S Gravenhage	1893
Deel 2	1053 pp.	'S Gravenhage	1898
Handleiding bij het Gebruik van de Tweede Uitgave der Pharmacopoea Neerlandica by D. J. Coster & R. J. Opwijrda.			
1st ed.	987 pp.	Groningen	1875
2nd ed.	640 pp.	Groningen	1880
3rd ed.	642 pp.	Groningen	1886
4th ed.	581 pp.	Groningen	1889
Handleiding bij Physiche en Chemische Waardebepalingen der Nederlandsche Pharmacopee by E. I. Van Itallie			
4th ed.	168 pp.	Amsterdam	1906
Inleiding tot de kennis van de Plantaaridge en Dierlijke Grondstoffen Nederlandsche Pharmacopee by D. J. Coster			
3rd ed.	110 pp.	Amsterdam	1890
Institutiones Pharmaceuticae by N. Fontani	327 pp.	Amsterdam	1633
Leeuwarder Apotheek			
3rd ed.	174 pp.	Amsterdam	1702
5th ed.	165 pp.	Amsterdam	1720
Nederlandsche Apotheek			
	441 pp.	'S Gravenhage	1826
	558 pp.	'S Gravenhage	1851
2nd ed.	23+391 pp.	'S Gravenhage	1871
Nederlandsche Pharmacopee			
3rd ed.	278 pp.	'S Gravenhage	1889
Suppl.	290 pp.	'S Gravenhage	1891
Reissue 3rd ed.	278 pp.	'S Gravenhage	1894
Suppl.	331 pp.	'S Gravenhage	1902
4th ed.	556+63 pp.	Amsterdam	1905
5th ed.	675 pp.	'S Gravenhage	1926
5th ed. 1st suppl.	101 pp.	'S Gravenhage	1934
5th ed. 2nd suppl.	37 pp.	'S Gravenhage	1939
5th ed. 1st suppl.	14 pp.	'S Gravenhage	1940
Nieuwe Amsterdamsche Apotheek, (trans. from Latin)	180 pp.	Amsterdam	1795
Nieuwe Niederdeutsche Apotheek			
2nd ed.	490 pp.	Leyden	1766
Pharmacopoea Amstelodamensis			
1st ed.	133 pp.	Amstelodami	1636

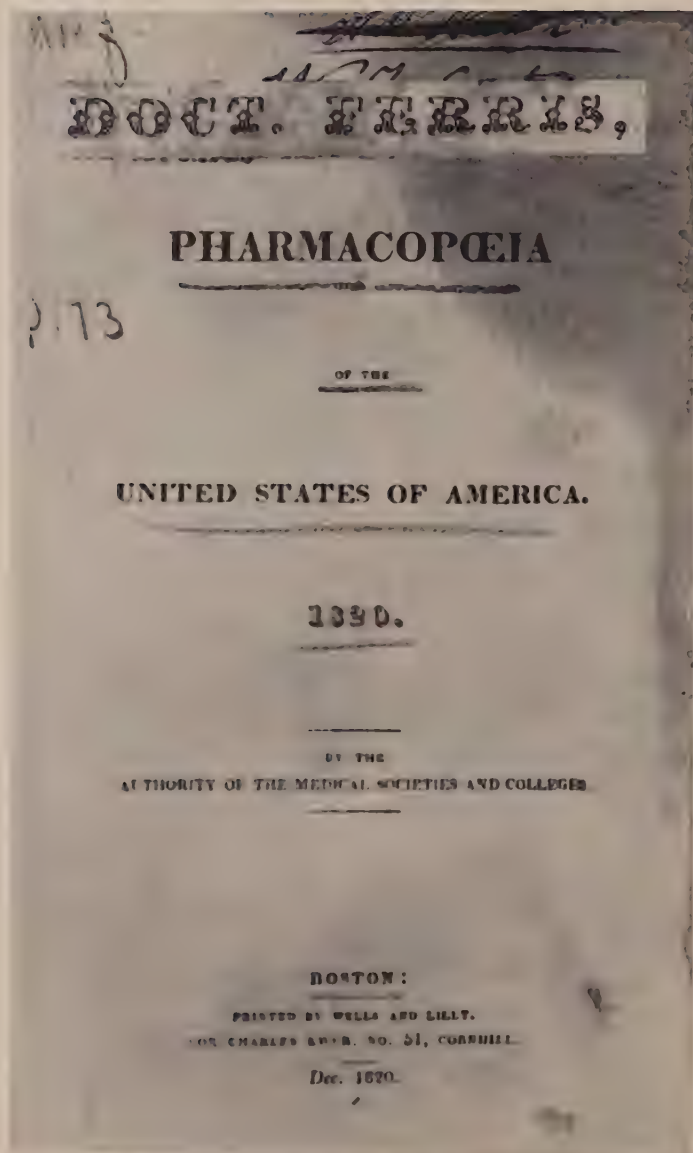


FIG. 7. Title page of the first edition of *The Pharmacopoeia of the United States of America*. Boston, 1820.

Pharmacopoea Amstelodamensis Nova	210 pp.	Amstelodami	1792
Pharmacopoea Amstelodamensis of d' Amsterdammer Apotheek			
6th ed.	174 pp.	Amsterdam	1706
10th ed.	203 pp.	Amsterdam	1741
Pharmacopoea Amstelodamensis Renovata			
	163 pp.	Amstelodami	1726
Pharmacopoea Batava			
	302+33 pp.	Amstelodami	1805
Also in Codex Medicamentarius Europaeus Sectio 4			
1st ed. V. 1	588 pp.	Lipsiae	1811
V. 2	374 pp.	Lipsiae	1811
2nd ed. V. 1	78+728 pp.	Lipsiae	1824
V. 2	30+805 pp.	Lipsiae	1824
V. 1	331 pp.	Mediolana	1823
V. 2	285 pp.	Mediolana	1823
V. 3	331 pp.	Mediolana	1823
Pharmacopoea Dordracena Galenico-Chimica			
3rd ed.	110 pp.	Dordraci	1766
Pharmacopoea Groningana			
	120 pp.	Groningae	1729
Pharmacopoea Hagana			
	196 pp.	Hagae-Comitum	1738
3rd ed.	253 pp.	Hagae-Comitum	1758
Pharmacopoea Hagiensis			
	108 pp.	Hagae-Comitum	1659
	122 pp.	Hagae-Comitum	1659
Pharmacopoea Harlemensis Galeno-Chemica			
	258 pp.	Harlemi	1741
Pharmacopoea Leidensis			
3rd ed.	176 pp.	Lugduni-Batavorum	1751
4th ed.	176 pp.	Lugduni-Batavorum	1770
Pharmacopoea Neerlandica			
	445+28 pp.	Hagae Comititis	1851
2nd ed.	307 pp.	Hagae Comititis	1871
3rd ed.	254 pp.	Hagae Comititis	1889
Supp.	158 pp.	'S Gravenhage	1865
Suppl. 4th ed.	160 pp.	'S Gravenhage	1867
Pharmacopoea Neerlandica, Handleiding ter Deproeven der Geheesmid-			
delen, by H. K. Nortier			
1st part	260 pp.	Tiel	1852
Pharmacopoea Pauperum Hagana			
	32 pp.	n.p.	1824
Pharmacopoea Ultrajectina			
Ed. nova	127 pp.	Trajecti ad Rhenum	1664
Pharmacopoea Ultrajectina Nova			
	240 pp.	Trajecti ad Rhenum	1749
Pharmacopoeia Galeno-Chemico-Medica by Wouter van Lis			
2nd ed.	435 pp.	Amsterdam	1764
Valerii Cordi Dispensatorium sive Pharmacorum Conficiendorum Ratio			
	749 pp.	Lugduni-Batavorum	1568
Woordenboek voor de Pharmacopoea Neerlandica by H. Joosten			
	80 pp.	Amsterdam	1852

NEW ZEALAND

The British Pharmacopoeia is official in New Zealand.

NICARAGUA

The United States Pharmacopoeia and the French Pharmacopoeia are used in Nicaragua.

See Pharmaceutical Abstracts v. 6, p. 235, 1940.

NORWAY

Pharmacopoea Norvegica	202 pp.	Christianiae	1854
2nd ed.	319 pp.	Christianiae	1870
Reissue 2nd ed.	319 pp.	Christianiae	1879
Norske Farmakopo 1913 (Pharmacopoea Norvegica)			
4th ed.	467 pp.	Kristiania	1913
5th ed.	577 pp.	Oslo	1939

LATIN AMERICA

Pharmacopoeias of America by Francisco Gignoli, in <i>Revista Farmacia</i> (Puerto Rico) vol. 3	889 pp.		1938
See <i>Pharmaceutical Abstracts</i> v. 6, p. 235, 1940.			
<i>Revista Brasileira de Farmácia</i> v. 31, p. 135-140, 1949.			

PANAMA

The United States Pharmacopoeia is used in Panama.			
See <i>Pharmaceutical Abstracts</i> v. 6, p. 235, 1940.			

PARAGUAY

The French Pharmacopoeia is used in Paraguay.			
See <i>Pharmaceutical Abstracts</i> v. 6, p. 235, 1940.			
Pharmacopoea Paraguaya, 1945			
See <i>American Journal of Pharmacy</i> v. 122, p. 231-2, 1950.			

PERSIA

Pharmacopoea Persica ex Idiomate Persico in Latinum conversa			
370 pp.	Lutetiae Parisiorum		1681

PERU

The French Pharmacopoeia is used in Peru.			
See <i>Pharmaceutical Abstracts</i> v. 6, p. 235, 1940.			

POLAND

Farmakopea Polska Wydanie Drugie, Pharmacopoea Polonica II			
1100 pp.	Warszawa		1937
Pharmacopoeia Regni Poloniae			
199 pp.	Lipsiae et Soraviae		1821
In <i>Codex Medicamentarius Europaeus Sectio 5</i> , v. 2			

PORTUGAL

Codigo Pharmaceutico Lusitano by A. A. da Silveira Pinto			
2nd ed.	376 pp.	Porto	1876
Materia Medica e Formulário Pharmaceutico by Hospitales do Exercito Portuguez			
331 pp.	Lisboa		1826
Observations sur la Nouvelle Pharmacopée Portugaisé by H. Verhassel			
0000 pp.			1877
Pharmacopea das Pharmacopeas by J. O. T. Cabral			
vol. 1	631 pp.	Lisboa	1833
vol. 2	471 pp.	Lisboa	1834
Pharmacopea Lusitana by Antonio Caetano De Santo			
712 pp.	Lisboa		1725
4th ed.	520 pp.	Lisboa	1754
Pharmacopoea Lusitanica			
207 pp.	Lipsiae et Soraviae		1822
In <i>Codex Medicamentarius Europaeus Sectio 6</i>			
Pharmacopêa Portuguesa			
547 pp.	Lisboa		1870
Edição Oficial	547 pp.	Lisboa	1876
Edição Oficial	770 pp.	Lisboa	1935
Farmacopoeia Portuguesa			
4th Edição Oficial	842 pp.	Lisboa	1946

Farmacopea Lisbonense by M. J. H. de Paiva			
2nd ed.	287 pp.	Lisboa	1802
Pharmacopoea Portuense by A. R. Portugal			
	206 pp.	Porto	1766
Pharmacopea Meadiana by A. R. Portugal, trans.			
	72 pp.	Porto	1768

PUERTO RICO

The United States Pharmacopoeia is used in Puerto Rico.
See Pharmaceutical Abstracts v. 6, p. 235, 1950.

RUMANIA

Formacopea Romana			
4th ed.	570 pp.	Edita a Patra Bucuresti	1926

RUSSIA

Pharmacopoea Rossica			
1st ed.	142 pp.	Petropoli	1778
2nd ed.	156 pp.	Petropoli	1782
3rd ed.	286 pp.	Petropoli	1798
4th ed.	727 pp. (Russian)	St. Petersburg	1891
7th ed.	1067 pp.	n.p.	1930

Military

Pharmacopoeia Castrensis Ruthena by Jacobo Wylie			
	38 + 434 pp.	Petropoli	1808
Pharmacopoeia Castrensis Ruthenica			
3rd ed.	302 pp.	Petropoli	1818
4th ed.	820 pp.	Petropoli	1840
Russisch Kaiserliche Feld-Pharmakologie			
	139 pp.	Stendal	1802

SCOTLAND

Dispensatory of the Royal College of Physicians in Edinburgh, trans. with notes by Peter Shaw	281 pp.	London	1727
Edinburgh New Dispensatory by Gentlemen of the Faculty at Edinburgh			
1st ed.	720 pp.	Edinburgh	1786
2nd ed.	656 pp.	Edinburgh	1789
4th ed. rev.	622 pp.	Philadelphia	1796
Edinburgh New Dispensatory by Andrew Duncan			
1st Worcester ed.	694 pp.	Worcester	1805
	704 pp.	Edinburgh	1803
2nd ed. enl. & rev.	753 pp.	Edinburgh	1804
3rd ed.	772 pp.	Edinburgh	1806
6th ed. cor. & enl.	865 pp.	Edinburgh	1811
8th ed.	747 pp.	Edinburgh	1816
9th ed.	736 pp.	Edinburgh	1819
Suppl.	268 pp.	Edinburgh	1829
Edinburgh New Dispensatory			
Amer. ed. enl. from the 8th and last Edinburgh ed.			
	798 pp.	New York	1818
Amer. ed. rev. & enl.	656 pp.	Philadelphia	1791
3rd Amer. from the 4th Edinburgh ed.			
	622 pp.	Worcester	1796
Nouveau Dispensaire d'Edinbourg by Andrew Duncan, Jr.			
(French by M. E. Pelouze) trans. from the 10th English ed.			
Vol. 1	426 pp.	Paris	1826
Vol. 2	427 pp.	Paris	1826
Pharmacopoea Edinburgensis Additamentis Aucta by E. G. Baldinger			
	293 pp.	Bremæ	1776
2nd ed.	423 pp. + Appendix	Bremæ	1784
Pharmacopoea Edinburgensis			
2nd ed. v. 2	140 pp.	Lipsiae & Soraviae	1821
In Codex Medicamentarius Europaeus, Sectio 1, v. 2			

Pharmacopoeia Collegii Regii Medicorum Edinburgensis			
	198 pp.	Edinburgh	1735
	188 pp.	Edinburgh	1744
	200+pp.	Edinburgh	1756 inc.
2nd ed.	146 pp.	Bremæ et Lipsiæ	1758
2nd ed.	146 pp.	Bremæ et Lipsiæ	1761
	236 pp.	Edinburgh	1783
	254 pp.	Edinburgh	1792
	255 pp.	Edinburgh	1803
	263 pp.	Edinburgh	1817
Pharmacopoeia Collegii Regii Medicorum Edinburgensis Reformata			
	146 pp.	Rotterdam	1775
Pharmacopoeia Edinburgensis, or, The Dispensatory of the Royal College of Physicians in Edinburgh, trans. by Peter Shaw			
4th ed.	265 pp.	London	1740
5th ed.	265 pp.	London	1746
Pharmacopoeia of the Royal College of Physicians of Edinburgh			
	217 pp.	Edinburgh	1839
Pharmacopoeia of the Royal College of Physicians at Edinburgh, trans. from the 4th ed. with notes by W. Lewis.			
	362 pp.	London	1748
Selectus Rationalis Medicaminum			
	320 pp.	Frankfurt & Lipsiæ	1756
Hospitals			
Pharmacopoeia Edinburgensis Pauperum: or, the Dispensatory for the use of the Royal Hospital in Edinburgh, now translated into English			
	111 pp.	London	1753
Pharmacopoeia of the Royal Infirmary Edinburgh—Rev. & enl. by Thomas Alexander			
2nd ed.	178 pp.	Edinburgh	1896
Pharmacopoeia Pauperum in usum Nosocomii Regii Edinburgensis			
	76 pp.	Edinburgh	1759
	60 pp.	Edinburgh	1763

SANTO DOMINGO

The United States Pharmacopoeia is used in Santo Domingo, as is the French Pharmacopoeia

See Pharmaceutical Abstracts v. 6, p. 235, 1940.

SOUTH AMERICA

European possessions in South and Central America use the pharmacopoeias of their respective nations.

See Pharmaceutical Abstracts v. 6, p. 235, 1940.

SPAIN

Codex Medicamentarius seu Pharmacopoea Hispanica			
	207 pp.	Lipsiæ et Soraviae	1822
In Codex Medicamentarius Europæus Sec. 6, v. 1			
Farmacopea Matritense en Castellano			
	403 pp.	Madrid	1823
Farmacopoea Oficial Española			
6th ed.	734 pp.	Madrid	1884
7th ed.	701 pp.	Madrid	1926
8th ed.	1037 pp.	Madrid	1930
Farmacopoea Oficial España			
9th ed. v. 1	764 pp.	Madrid	1954
v. 2	622 pp.	Madrid	1954
Formularium Medico-Chirurgicum			
	36 pp.	Cadiz	1752
Hispalensium Pharmacopoliorum Recognitio by Simone Tovar			
	165 pp.	Hagæ-Comitis	1640

Pharmacopoea de la Armada by L. De Vega			
1st ed.	165 pp.	Cadiz	1759
2nd ed.	127 pp.	Cadiz	1759
Pharmacopoea Española			
5th ed.	628 pp.	Madrid	1865
Pharmacopoea Hispana			
4th ed.	358 pp.	Matriti	1817

SWEDEN

Codex Medicamentarius Sive Pharmacopoea Svecica	228 pp.	Lipsiae	1821
In Codex Medicamentarius Europaeus, vol. 1, Sec. 3			
Pharmacopoea Svecica	237 pp.	Holmiae	1775
Reissue of 2nd ed. 1780	130 pp.	Lipsiae & Altonae	1784
4th ed. emendata	183 pp.	Lipsiae	1787
4th ed. emendata	158 pp.	Holmiae	1790
6th ed.	236 pp.	Stockholmiae	1846
7th ed.	275 pp.	Stockholmiae	1869
7th ed. 3rd impr.	290 pp.	Stockholmiae	1879
7th ed. 4th impr.	290 pp.	Stockholmiae	1888
Schwedische Pharmacie oder Apotheker-puch	228 pp.	Leipzig	1776
Svenska Farmakopén (Pharmacopoea Svecica)			
8th ed.	408 pp.	Stockholm	1901
9th ed.		Stockholm	1908
10th ed.	609 pp.	Stockholm	1925
11th ed.	911 pp.	Stockholm	1946
Suppl. 14 pts.	(Unnumb.)	Stockholm	1951-55

Military

Pharmacopoea Militaris Suecica, 1871	45 pp.	Stockholmiae	1871
3rd impression	46 pp.	Stockholmiae	1888

SWITZERLAND

Pharmacopoeae Bernensis Tentamen	859 pp.	Bernae	1852
Pharmacopoea Helvetica	212+384+54 pp.	Basileae	1771
	341 pp.	Scaphusiae	1865
2nd ed.	197 pp.	Scaphusiae	1872
Suppl.	165 pp.	Scaphusiae	1876
3rd ed. (Ed. Française)	398 pp.	Zurich	1893
3rd ed. (Ed. Deutsch)	398 pp.	Zurich	1893
4th ed. (Ed. Deutsch)	639 pp.	Bern	1907
5th ed. (Ed. Deutsch)	1244 pp.	Bern	1933
5th ed. (French with Suppl. 1.)	1344 pp.	Bern	1949
5th ed. (German with Suppl. 1.)	179 pp.	Bern	1948
5th ed. (German with Suppl. 2.)	202 pp.	Bern	1945

Hospital

Die Gebräuchlichsten Receptformeln der Berner Medicinischen Klinik by Emil Levier	55 pp.	Berne	1864
Pharmacopoea Genevensis ad Usum Nosocomiorum	199 pp.	Genevae	1780

UNION OF SOUTH AFRICA

The British Pharmacopoea is official in the Union of South Africa.

THE
ECLECTIC AND GENERAL
DISPENSATORY:
COMPREHENDING A
SYSTEM OF PHARMACY, MATERIA MEDICA,
THE FORMULÆ OF THE LONDON, EDINBURGH, AND
DUBLIN PHARMACOPŒLAS,
PRESCRIPTIONS OF MANY EMINENT PHYSICIANS,
AND
RECEIPTS FOR THE MOST COMMON
EMPIRICAL MEDICINES:
COLLATED FROM THE BEST AUTHORITIES.
BY AN AMERICAN PHYSICIAN.

PHILADELPHIA
TOWAR AND HOGAN, 255 MARKET STREET.
NIXFLEX AND PARRY, PRINTERS.

1827

FIG. 8. Title page of *The Eclectic and General Dispensatory*. Philadelphia, 1827.

UNITED STATES			
American Dispensatory by John Redman Coxé			
	788 pp.	Philadelphia	1806
2nd ed.	839 pp.	Philadelphia	1810
3rd ed. improved	771 pp.	Philadelphia	1814
4th ed.	735 pp.	Philadelphia	1818
6th ed.	766 pp.	Philadelphia	1825
7th ed. imp. & enl.	780 pp.	Philadelphia	1827
8th ed. imp. & enl.	808 pp.	Philadelphia	1830
9th ed. imp. & enl.	832 pp.	Philadelphia	1831
American New Dispensatory by James Thacher			
	529 pp.	Boston	1810
2nd ed.	732 pp.	Boston	1813
4th ed.	736 pp.	Boston	1821
Conspectus of the Pharmacopoeias of the London, Edinburgh, and Dublin Colleges of Physicians, and of the United States Pharmacopoeia, being a practical compendium of Materia Medica and Pharmacy, by Anthony Todd Thomson			
7th American edition much enlarged and improved . . . from the 13th English edition by Charles A. Lee			
	322 pp.	New York	1862
Dispensatory and Therapeutical Remembrancer by John Mayne			
Rev.	329 pp.	Philadelphia	1848
Dispensatory of the United States of America by George B. Wood and Franklin Bache			
	1073 pp.	Philadelphia	1833
2nd ed.	1162 pp.	Philadelphia	1834
3rd ed. enl. & rev.	1171 pp.	Philadelphia	1836
4th ed. enl. & rev.	1246 pp.	Philadelphia	1839
5th ed. enl. & rev.	1368 pp.	Philadelphia	1843
6th ed. Rev.	1368 pp.	Philadelphia	1845
7th ed. Rev.	1368 pp.	Philadelphia	1847
8th ed. Rev.	1376 pp.	Philadelphia	1849
9th ed. Rev.	1456 pp.	Philadelphia	1851
10th ed. Rev.	1480 pp.	Philadelphia	1854
11th ed. Rev.	1583 pp.	Philadelphia	1858
12th ed. rev. by George B. Wood			
	1704 pp.	Philadelphia	1865
12th ed. rev.	1704 pp.	Philadelphia	1866
13th ed. rev.	1810 pp.	Philadelphia	1875
14th ed. rev. by George B. Wood and Horatio C. Wood			
	1879 pp.	Philadelphia	1877
14th ed. rev.	1879 pp.	Philadelphia	1880
15th, 16th, 17th, 18th and 19th ed. rev. by H. C. Wood, J. P. Remington and S. P. Sadtler			
15th ed. rev.	1928 pp.	Philadelphia	1883
16th ed. rev.	2091 pp.	Philadelphia	1888
17th ed. rev.	1930 pp.	Philadelphia	1894
18th ed. rev.	1999 pp.	Philadelphia	1899
19th ed. rev.	1947 pp.	Philadelphia & London	1907
20th ed. rev. by J. P. Remington and H. C. Wood, Jr.			
	2010 pp.	Philadelphia & London	1918
22nd ed. rev. by H. C. Wood, Jr., and Chas. H. LaWall			
	1894 pp.	Philadelphia & London	1937
23rd. ed. by H. C. Wood, Jr., and Arthur Osol			
	1881 pp.	London & Montreal	1943
24th ed. by Arthur Osol and Geo. E. Farrar			
v. 1	1928 pp.	Philadelphia, London & Montreal	1947
v. 2	1929-2057 pp.	Philadelphia, London & Montreal	1950
Dispensatory of the United States of America—Supplement by H. C. Wood, Jr.			
22nd ed.	76 pp.	Philadelphia, London & Montreal	1940
23rd ed. by H. C. Wood Jr. and Arthur Osol			
	71 pp.	Philadelphia, London & Montreal	1944

Drugs and Medicines of North America by John Uri & C. G. Lloyd			
vol. 1	304 pp.	Cincinnati	1884-86
vol. 2	162 pp.	Cincinnati	1886-87
Addenda vol. 1 no. 1-3	20 pp.	Cincinnati	1884-85
Elixirs, Their History, Formulae, and Methods of Preparation by John Uri Lloyd			
	187 pp.	Cincinnati	1883
2nd ed.	187 pp.	Cincinnati	
	191 pp.	New York	
Farmacopea de los Estados Unidos de América			
9th ed.	750 pp. (Spanish)	Filadelfia	1916
First Pharmacopoeia Published in the United States by Joseph W. England			
Reprint from "The First Century of the Philadelphia College of Pharmacy."	12 pp.	Philadelphia	1922
Half Century of the National formulary, 1880-1930 by H. A. Langenhan (Reprinted from the Journal of the American Pharmaceutical Association)			
Vol. 15 nos. 8-12			1926
Vol. 16 nos. 1-6			1927
	99 pp.	Washington, D. C.	1930
Indian Doctor's Dispensatory by Peter Smith			
	108 pp.	Cincinnati	1813
(Facsimile in Lloyd Library Bull. no. 2)			
	112 pp.	Cincinnati	1901
Materia Medica Americana Potissimum Regni Vegetabilis by Dr. Johann David Schoepf. 170 pp. Erlangae. (Probably the rarest of American works).			
			1787
Fascimile reprint in Lloyd Library Bulletin No. 6, 1903, Cincinnati			
National Dispensatory by Alfred Stille and John N. Maisch			
	1628 pp.	Philadelphia	1879
2nd ed. rev.	1680 pp.	Philadelphia	1880
3rd ed. rev. & enl.	1694 pp.	Philadelphia	1884
5th ed.	1903 pp.	Philadelphia	1894
National Formulary (New Edition) in the National Dispensatory			
5th ed.	115 pp.	Philadelphia & New York	1896
National Formulary of Unofficial—Preparations			
	284 pp.	Philadelphia	1886
(Reprinted from the Proceeding v. 34)			
National Formulary of Unofficial Preparations			
1st issue	176 pp.	n.p.	1888
3rd ed. rev. & enl.	268 pp.	Baltimore	1906
National Formulary			
4th ed.	394 pp.	Philadelphia	1916
5th ed.	545 pp.	Philadelphia	1926
6th ed.	556 pp.	Washington, D. C.	1935
7th ed.	690 pp.	Washington, D. C.	1942
8th ed.	850 pp.	Washington, D. C.	1946
10th ed.	867 pp.	Philadelphia & Montreal	1955
Epitome of the National Formulary of Unofficial Preparations			
Part one & two	87 pp.	Washington, D. C.	1898
1st ed.	89 pp.	Washington, D. C.	1900
National Standard Dispensatory by H. A. Hare & C. Caspari, & others			
	1859 pp.	Philadelphia & New York	1905
2nd ed.	2011 pp.	Philadelphia & New York	1909
3rd. ed. enl. & rev.	2081 pp.	Philadelphia & New York	1916
New York and Brooklyn Formulary of Unofficial Preparations			
	46 pp.	New York	1884
2nd ed.	46 pp.	New York	n.d.

Origin and History of the Pharmacopeial Vegetable Drugs by John Uri Lloyd

vol. 1 (all pub.)	449 pp.	Cincinnati	1921
2nd pr. vol. 1 (all pub.)	449 pp.	Cincinnati	1929
vol. 2 mss, unpub. by S. Waldbott & F. F. Heyroth			

Pharmacopœia of the United States of America

1st ed.	272 pp.	Boston	1820
2nd ed.	272 pp.	Boston	1828
2nd ed.	176 pp.	New York	1830
1st ed. rev.	268 pp.	Philadelphia	1830
	279 pp.	Philadelphia	1842
	317 pp.	Philadelphia	1851
2nd ed.	317 pp.	Philadelphia	1855
4th Decen. rev.	399 pp.	Philadelphia	1863
4th Decen. rev.	399 pp.	Philadelphia	1864
5th Decen. rev.	383 pp.	Philadelphia	1873
5th Decen. rev.	383 pp.	Philadelphia	1876
5th Decen. rev.	383 pp.	Philadelphia	1881
6th Decen. rev.	488 pp.	New York	1882
7th Decen. rev.	602 pp.	Philadelphia	1893
8th Decen. rev.	692 pp.	Philadelphia	1905

Changes in the Pharmacopœia of the United States of America 8th decennial revision

	122 pp.	Washington, D. C.	1905
9th Decen. rev.	728 pp.	Philadelphia	1916
10th Decen. rev.	626 pp.	Philadelphia	1926
Pharmacopœia of the United States of America			
11th Decen. rev.	676 pp.	Easton, Pa.	1936
12th revision	880 pp.	Easton, Pa.	1942
12th revision (1st. bd. Supp.)	104 pp.	Easton, Pa.	1944
13th rev.	957 pp.	Easton, Pa.	1947
14th rev.	1067 pp.	Easton, Pa.	1950
14th rev. (1st Suppl.)	4 pp.	Easton, Pa.	1950
14th rev. (3 rd Suppl.)	20 pp.	Easton, Pa.	1952
14th rev. (4th Suppl.)	15 pp.	Easton, Pa.	1954
15th rev.	1178 pp.	Easton, Pa.	1955

Pharmacopœia Simplicius et Efficaciorum by G. Brown, trans. by Prof. Nevin

2nd ed.	9 pp.	Philadelphia	1781
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Facsimile in the American Journal of Pharmacy, Sept. 1844

Vol. 56	483+491 pp.		
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Pharmacopœia of the German Hospital of the City of Philadelphia

	142 pp.	Philadelphia	1902
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Pharmacopœia of the Massachusetts Medical Society

	272 pp.	Boston	1808
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Pharmakopœe der Vereinigten Staaten von Nordamerika, 1842

Deutsche Bearbeitung	103 pp.	Leipzig	1844
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Reagents and Volumetric Solutions Proposed for the U. S. Pharmacopœia

	40 pp.	St. Louis	1892
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Unofficial Pharmacopœia by Oscar Oldberg

	503 pp.	Philadelphia	1881
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Hospitals

Hospital Formulary of the Department of Public Charities and Correction of the City of New York

	14 pp.		1868
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3rd ed. rev.	127 pp.	New York	1886
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4th ed. rev.	143 pp.	New York	1889
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5th ed. rev.	95 pp.	New York	1898
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Pharmacopœia for the treatment of Diseases of the Larynx, Pharynx and

Nasal Passages by G. M. Lefferts

2nd ed. rev. & enl.	101 pp.	New York & London	1884
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Pharmacopoeia Nosocomii Neo-Eboracensis, The Pharmacopoeia of the
New York Hospital 181 pp. New York 1816

URUGUAY

The French Pharmacopoeia is used in Uruguay.
See Pharmaceutical Abstracts v. 6, p. 235, 1940.

VENEZUELA

Farmacopoea de los Estados Unidos de Venezuela.
1st ed. 1031 pp. Caracas 1942

WALES

The British Pharmacopoea is official in Wales.

ECLECTIC

American Eclectic Dispensatory by John King & R. S. Newton
708 pp. Cincinnati 1852
2nd ed. by John King 1391 pp. Cincinnati 1854
5th ed. 1476 pp. Cincinnati 1859
6th ed. rev. & enl. 1509 pp. Cincinnati 1864
7th ed. rev. & enl. 1509 pp. Cincinnati 1870
8th ed. rev. & enl. 1440 pp. Cincinnati 1876
10th ed. rev. & enl. 1439+Supp. 202 pp. Cincinnati 1886
17th ed. rev. & enl. 1439 pp. Cincinnati 1895
17th ed. Supp. 202 pp. (J. King & J. U. Lloyd) Cincinnati 1880
17th ed. Supp. 202 pp. (J. King & J. U. Lloyd) Cincinnati 1880
18th ed. rewritten & enl. 3rd rev. by H. W. Felter & J. U. Lloyd
V. 1 904+37 pp. Cincinnati 1898
19th ed. rewritten & enl. 3rd rev.
V. 1 904+37 pp. Cincinnati 1905
V. 2 2172+57 pp. Cincinnati 1905
Dispensatory and Pharmacopoeia of North America and Great Britian by
Drs. Buchanan and Suggins 630 pp. Philadelphia 1878
Eclectic and General Dispensatory 627 pp. Philadelphia 1827
Eclectic Pharmacopoeia by John Uri Lloyd
mss. unpub. Cincinnati n.d.
Eclectic Pharmacopeia by John Uri Lloyd in Eclectic Medical Journal
vol. 30 p. 435-436, 460-462, 530-531 1870
vol. 31 p. 14 1871
Physiomedical Dispensatory by Dr. W. H. Cook
832 pp. Cincinnati 1869

GENERAL

Allgemeine Pharmakopöe by F. L. Strumpf
950 pp. Leipzig und Heidelberg 1861
Book of Pharmacopoeias by E. W. Lucas & H. B. Stevens
524 pp. London 1915
524 pp. Philadelphia 1915
Dispensatorium Medicum by Ioanne Renodaeo
1115 pp. Coloniae Allobrogum 1623
Mosis Charas Medicinae Doctoris—Pharmacopoea Regia Galenica, Gallice
ab Auctore Conscripta 496+449+275 pp. Genevae 1684
Pharmacopoea Dogmaticorum Restituta by Jos. Quercetano
630 pp. Paris 1607
269+43 pp. Venetiis 1614
591 pp. n.p. 1620
Pharmacopoea Generalis by J. R. Spielmann
218+372 pp. Argentorati 1783
1 Veneta ed. 3 v. in one 112+178+216 pp. Venetiis 1785-6

Pharmacopée De Bauderon by François Verny	408+294 pp.	Lyon	1662
(Derniere ed.)	534+415 pp.	Lyon	1672
Pharmacopée De Bauderon by G. Savvageon	512+32+97 pp.	Paris	1648
Deutsche Apoteker—(Dutch by Sydenhm)	677 pp.	Strassburg	1595
Pharmacopée Royale Galenique et Chymique by Moyse Charas	1060 pp.	Paris	1676
3rd ed. rev.	454+328 pp.	Paris	1681
Nouv. ed. 3 pts. in 1 vol	848 pp.	Paris	1691-2
Nouv. ed. rev.	884 pp.	Lyon	1704
Nouv. ed. rev.	884 pp.	Lyon	1717
V. 1	876 pp.	Lyon	1753
Pharmacopoeia Chirurgica by James Wilson	236 pp.	London	1810
5th ed.	252 pp.	London	1802
	252 pp.	Philadelphia	1818
(1st American ed. from 3rd London ed.)			
Report on the Pharmacopoeias of all Nations by James M. Flint	29 pp.	Washington, D. C.	1883
Pharmacopée Générale a l'Usage des Pharmaciens et des Médecins Modernes by L. V. Brugnatelli & trans. by L. A. Planche			
v. 1	379 pp.	Paris	1811
v. 2	340 pp.	Paris	1811

HOMŒOPATHIC

American Homoeopathic Pharmacopoeia by J. T. O'Connor			
3rd ed. rev. & aug.	521 pp.	New York, Philadelphia, Chicago	1885
4th ed. rev. & aug.	521 pp.	New York, Philadelphia, Chicago	1890
8th ed.	549 pp.	Philadelphia	1906
10th ed.	549 pp.	Philadelphia	1928
British Homoeopathic Pharmacopoeia			
3rd ed.	456 pp.	London	1882
Deutsches Homöopathisches Arzneibuch by Willmar Schwabe			
Ed. A.	668 pp.	Leipzig	1901
Dr. Caspari's Homöopathisches Dispensatorium by F. Hartmann			
6th ed.	241 pp.	Leipzig	1844
7th ed.	227 pp.	Leipzig	1852
Homöopathische Pharmacopöe by Ludwig Deventer			
	172 pp.	Berlin	1860
3rd ed.	315 pp.	Berlin	1886
Homöopathische Pharmakopöe by Carl Ernest Gruner			
	195 pp.	Dresden und Leipzig	1845
2nd ed.	239 pp.	Leipzig	1854
3rd ed.	240 pp.	Leipzig	1864
New Homoeopathic Pharmacopoeia and Posology trans. with additions by James Kitchen by G. H. G. Jahr			
	306 pp.	Philadelphia, New York	1842
New Homoeopathic Pharmacopoeia & Posology from Buchner, Gruner and Jahr, with original contributions by C. J. Hempel			
	359 pp.	New York	1850
Nouvelle Pharmacopée et Posologie Homoeopathiques by G. H. G. Jahr			
	328 pp.	Paris	1841
Nouvelle Pharmacopée Homoeopathique by G. H. G. Jahr & A. Catellan			
2nd ed.	436 pp.	Paris	1853
3rd ed.	436 pp.	Paris	1862
Pharmacopoea Homoeopathica Polyglottica by Willmar Schwabe			
	251 pp.	Leipzig, New York	1872
Pharmacopoeia of the American Institute of Homeopathy			
	674 pp.	Boston	1897

Pharmacopoea Homoeopathica Polyglotta			
2nd ed. rev. & enl.	374 pp.	Leipzig, New York	1880
Pharmacopée Homoeopathique Française by H. Ecalé and Others			
	400 pp.	Paris	1898
United States Homoeopathic Pharmacopoeia			
1st ed.	281 pp.	Chicago	1878
UNIVERSAL			
Conspectus of the Pharmacopoeias of London, Edinburgh, Dublin, Paris, and the United States by G. M. Mowbray	96+ pp. (last pages worn out)	n.p.	n.d.
Convenance de la Promulgation d'une Pharmacopée Universelle by Jose D. Morales	3 pp.	n.p.	n.d.
Dispensatorium Pharmaceuticum Universale Sive Thesaurus Medicamentorum by Daniel Wilhelm Triller			
v. 1	855 pp.	Frankfurti ad Moenum	1764
v. 2	592 pp.	Neapoli	1779
Dispensatorium Universale Seu Lexicon by Christ. Frieder Reuss			
2nd ed. rev. pt. 1	640 pp.	Argentorati	1791
2nd ed. rev. pt. 2	641-1504 pp.	Argentorati	1791
Etude generale et comparative des Pharmacopées d'Europe et d'Amerique by F. A. Verwaest	90 pp.	Paris	1872
Farmacopea Universale			
	538 pp.	Venezia	1735
	538 pp.	Venezia	1742
	484 pp.	Venezia	1762
Medulla Medicinae Universae	58 pp.	London	1747
Nuova Farmacopea Universale by Robert James			
Ed. Prima Veneta	742+42 pp.	Venezia	1758
Pharmacopoeia Medici Practici Universalis by F. Swediaur	667 pp.	Parisiis	1803
Pharmacopoeia Universalis: or, New English Dispensatory			
3rd ed.	668 pp.	London	1764
Pharmacologiae Universae by F. J. Voltelen			
Pars I & II & III	400+402+260	Lugduni Batavorum	1797, 1800, 1802
Pharmacopoea Internationalis			
1st ed. vol. 1	406 pp.	Geneva	1951
vol. 2	350 pp.	Geneva	1955
1st ed. vol. 1 (German Trans.)	438 pp.	Stuttgart	1955
Pharmacopoea Universalis—(German)			
2nd ed. vol. 1	802 pp.	Weimar	1832
2nd ed. vol. 2	841+18 pp.	Weimar	1832
3rd ed. vol. 1	878 pp.	Weimar	1838
3rd ed. vol. 2	986 pp.	Weimar	1840
4th ed. rev. vol. 1	920 pp.	Weimar	1845
4th ed. rev. vol. 2	1044 pp.	Weimar	1846
Pharmacopoea Universalis by P. L. Geiger			
Pars Prior	356 pp.	Heidelbergae	1835
Pars Posterior	1071 pp.	Heidelbergae	1845
Pharmacopée Universelle—Rapport fait au Congrès International de 1875 by N. Gille (Journal de Pharmacie d'Anvers)	16 pp.		1875
Pharmacopée Universelle by Nicolo Lemery			
	1050 pp.	Paris	1698
2nd ed.	1100 pp.	Paris	1716
2nd ed.	1092 pp.	Paris	1725
4th ed.	780 pp.	La Naye	1729
5th ed.	864 pp.	Paris	1761

Pharmacopée Universelle by A. J. L. Jourdan			
vol. 1	727 pp.	Paris	1828
vol. 2	746 pp.	Paris	1828
2nd ed. vol. 1	804 pp.	Paris	1840
2nd ed. vol. 2	647 pp.	Paris	1840
Pharmacopée Universelle et Uniformité on Medicine 1879 by N. Gille			
Repport de la Commission Internationale (Journal de Pharmacie d'Anvers)	14 pp.	Anvers	1879
Pharmacopée Universelle Raisonnée by M. Quincy			
	490+516 pp.	Paris	1749
Projet d'une Pharmacopée Internationale 1885 by Antoin Waldheim			
	61 pp.	Vienne	1885
Projet de Pharmacopée Universelle ou Codex Medicamentarius Universalis by F. Boudet			
	12 pp.	Paris	1874
Selectus Observationum by C. F. Reuss			
	452 pp.	Argentorati	1789
Universal Pharmacopöe by Bruno Hirsch			
vol. 1	971 pp.	Leipzig	1887
vol. 2	1264 pp.	Göttingen	1890
vol. 1	559 pp.	Göttingen	1902
vol. 2	1015 pp.	Göttingen	1902
Vollständige und Nutzreiche Apotheke by J. Schroeder			
	1340+120+50 pp.	Nürnberg	1693

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- . 1946. *Pharmacopoeias as Witnesses of World History*. *Journal of the History of Medicine and Allied Sciences* 1(1): 46-70.
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Studies of Some Tremellaceae

KENNETH WELLS

(Department of Botany, State University of Iowa, Iowa City, Iowa)

This paper constitutes a report on several species of tremellaceous fungi occurring in tropical regions and of certain relatively rare or inadequately described temperate species. During the course of this study, attempts were made to clarify the generic position of these species in the light of Ervin's (Mycologia **49**: 118–123. 1957) recent studies of the genus *Sebacina* and related genera. Specimens collected by Martin in Colombia and Panamá in 1935, 1937, and 1945, and by Martin and Welden in Panamá in 1952 form the basis of this study. Numerous collections from Brazil by the late Rev. J. Rick, in addition to several collections from Argentina by Dr. R. Singer, from Brazil by Mr. E. J. H. Corner, and from the Marshall Islands, Hawaii, and Oregon by Dr. D. P. Rogers, were also examined during the course of this study.

Ervin considered the genus *Sebacina* as defined by McGuire (Lloydia **4**: 1–43. 1941) and Martin (Univ. Iowa Stud. Nat. Hist. **19**: 44–61. 1952) as including four genera; i.e., *Sebacina* based on *Corticium incrustans* Pers., *Exidiopsis* based on *Exidia* (*Exidiopsis*) *effusa* Bref., *Bourdotia* based on *Sebacina Galzinii* Bres., and *Heterochaetella* based on *Heterochaete dubia* Bourd. & Galz. In addition, Ervin (Mycologia **48**: 690–693. 1956) erected the genus *Gloëotromera*, with *Exidiopsis alba* Lloyd as the type species, to include those species formerly placed in the genus *Sesmosarca*, since Martin (Mycologia **43**: 112–113. 1951) has shown that the type, *Seisimosarca hydrophora* Cooke, is probably an *Auricularia*.

The genera considered by Ervin are closely related, and the distinctions between them somewhat obscure. The genus *Sebacina*, in the restricted sense, is clearly distinct from *Exidiopsis*, the distinctions being based primarily on the hyphal structure and the growth habits of the two groups. In the former genus, the hyphae are without clamp-connections and usually have relatively thick walls. It appears that the genus *Sebacina* forms a natural series from *Sebacina epigaea* (Berk. & Br.) Bourd. & Galz. to the incrusting species, *Sebacina helvelloides* (Schw.) Burt and *Sebacina incrustans* (Fries) Tul. This group differs only in the form of the fructification from the genus *Tremellodendron*, since the latter genus has similar hyphal and basidial structure. The difference in form is not great, for *S. incrustans* often forms erect projections suggestive of the tough, erect fructifications of the species of *Tremellodendron*. Thus the defined limits between *Sebacina*, in the restricted sense, and *Tremellodendron* may well be artificial and not indicative of the natural relationships of the fungi involved.

The genus *Exidiopsis* may be readily distinguished from *Sebacina* by its completely resupinate growth habit and thin-walled, clamp-bearing hyphae which often become indistinct or agglutinate. In *Exidiopsis*, a few subulate cystidia may always be found in *Exidiopsis*

sublilacina (Martin) Ervin and rarely in *Exidiopsis podlachica* (Bres.) Ervin. Clavate or fusiform proliferations from the fertile hyphae, here termed "paraphysoids", are found in several species; e.g., *Exidiopsis fuliginea* Rick and *Sebacina sordida* Olive. The presence or absence of these structures in apparently closely related species indicates that their use as taxonomic characters must be made with caution, especially since they may be either present or absent in specimens otherwise referable to the same species. The cylindrical, hyaline structures found in *Sebacina obscura* Martin are here termed dikaryophyses¹, since they lack the yellow or brown granules found in the gloecystidia of species of *Bourdotia* and *Gloeotromera* and do not arise from the fertile hyphae as do the paraphysoids of *Exidiopsis fuliginea* Rick.

The limits between the genera *Eichleriella* and *Exidiopsis* are vague, since *Sebacina calcea* (Pers. ex Fries) Bres., because of its arid-waxy texture, suballantoid spores, large obovate basidia and lack of an ascending hyphal layer, appears to be more closely related to species included in the genus *Eichleriella* by Martin (Univ. Iowa Stud. Nat. Hist. 19: 64-66. 1952) than to the waxy-gelatinous species of *Exidiopsis*. Thus the genus *Eichleriella* should be redefined to include *S. calcea* and perhaps other species; however, before this is done additional study is required.

As McGuire (Lloydia 4: 1-43. 1941) has pointed out, *Sebacina umbrina* Rogers is not closely related to *Bourdotia*, thus should be placed in the genus *Exidiopsis*, near *Sebacina plumbescens* Burt. The clavate structures arising from the fertile hyphae and lacking a granular content are more akin to similar structures in *Exidiopsis fuliginea* Rick and hence are best termed paraphysoids. The term "gloeocystidium" is restricted, in this study, to the cylindrical, clavate, or fusiform structures with granular content, which arise from a hyphal system separate from the fertile hyphae. The remaining species of *Bourdotia*, as defined by McGuire (Lloydia 4: 1-43. 1941) as a section of *Sebacina*, form a closely related group. *Bourdotia grandinioides* Bourd. & Galz., *Bourdotia Eyrei* (Wakef.) Bourd. & Galz., *Bourdotia caesio-cinerea* (Höhn. & Litsch.) Bourd. & Galz., *Bourdotia cinerea* (Bres.) Bourd. & Galz., and *Bourdotia Galzinii* (Bres.) Bres. & Torr. form a natural series in which there is a gradual transition from a thin, arid to a thicker, waxy-gelatinous fructification, from indistinct to distinct dikaryophyses and hyphae, from subglobose to cylindrical spores, from subglobose or urniform to near-clavate basidia, from short subulate sterigmata with little or no epibasidia to cylindrical epibasidia, and an increase in the distance between the basidia along the fertile hyphae. *Sebacina petiolata* Rogers is closely related to *B. Galzinii*, differing primarily in the possession of petiolate basidia. Both *Sebacina Pini* Jackson & Martin and *Sebacina rimosa* Jackson & Martin are obviously closely related to *B. cinerea*. *Sebacina megaspora* Martin apparently does not belong to this group and should be transferred to the genus *Gloeotromera*, since it is somewhat cerebriform with determinate margins. Whether or not the genus *Bourdotia* as defined by Ervin (Mycologia

¹It has been suggested by Dr. G. W. Martin that the term "dikaryophyses" be used as a contraction of dikaryoparaphyses in the sense of Lowy (Mycologia 46: 101. 1954).

49: 122. 1957) is sufficiently distinct from *Exidiopsis* to be regarded as a distinct genus is open to question; however, the recognition of *Bourdotia* as a genus is, in my opinion, justified, since such an arrangement segregates several closely related species into a natural group.

The determinate growth and free margins of species of *Gloeotromera* separate this genus from *Bourdotia*. In addition, species of *Gloeotromera* have an ascending hyphal layer, composed of distinct hyphae with elaborate clamp-connections. Such an ascending hyphal layer is lacking in species of *Bourdotia*. The fertile hyphae in *Gloeotromera* never bear an involucre-like sheath of collapsed basidia; however, such an arrangement of the collapsed basidia is characteristic for the older specimens of most species of *Bourdotia*. The dikaryophyses of *Gloeotromera pululahuana* (Pat.) Ervin are somewhat similar to the dikaryophyses of *Sebacina* (*Bourdotia*) *petiolata* Rogers, which, together with the possession of gloeocystidia indicates a rather close relationship between the two genera. The presence of the gloeocystidia and the lack of the tough, epihymenial layer characteristic of *Exidia* distinguishes *Gloeotromera* from certain species of *Exidia*. Thus *Gloeotromera* is a genus which has certain characters similar to the waxy-gelatinous species of *Bourdotia*, whereas other characters are similar to certain species of *Exidia*. The retention of *Gloeotromera* as a separate genus seems justified in view of the fact that the species are sharply separated from *Bourdotia* by the growth habit and the characters of the fertile hyphae and from *Exidia* by the characters of the hymenium.

During the course of this work it was found that single species often exhibit a rather wide variation with respect to color, consistency and thickness. Less variable are such characters as shape of basidia, manner of septation of the basidia, spore shape and size, distinctness of the hyphae and internal structure.

The macroscopic aspect of a specimen is helpful for identification purposes but must be used with caution, since the same species often exhibits extremely wide variation at different ages. Older specimens often exhibit growth layers indicative of renewed growth and appear quite distinct from specimens with only one or two growth layers. The color of the thinner specimens is often influenced a great deal by the color of the substrate, whereas thicker specimens show less variation in this respect when collected on different substrata. In addition, color is often influenced by the amount of mineral granules or crystals present within the fructification. Older specimens of *Exidiopsis fuliginea* Rick, *Sebacina mucedinea* Pat., and species of *Bourdotia* and *Gloeotromera* are somewhat darker than younger specimens due apparently to the accumulation of brown granules in the dikaryophyses or gloeocystidia.

The consistency of a specimen is less variable than color and thickness and is, therefore, more useful than these characters. Consistency is more indicative of the hyphal structure or internal structure, it is, therefore, a more fundamental character than either color or thickness. Nevertheless, certain species often show considerable variation in consistency at different ages and under different environmental conditions.

The determination of the manner in which the basidia are borne is essential for the proper determination of a specimen. This character is, without doubt, the most consistent trait within a species. However it is often difficult to demonstrate, especially in the older specimens. By staining with a saturated aqueous solution of Congo Red made slightly alkaline with ammonium hydroxide, the walls of the fertile hyphae are often made visible.

Because of the wide variation of the many characters, it has been found necessary to adopt a wide concept of the species and to reduce a number of specific epithets to synonymy where there is lacking a consistent difference between the specimens involved. In several cases specimens assigned to the same species can be readily differentiated into two or more groups; however, a study of additional specimens has shown that the characters used to differentiate the groups vary to such an extent that it is impossible to recognize more than one species.

The species studied are grouped according to genera in which they seem to belong according to the preceding discussion. The type of *Sebacina circumdata* Pat. was found to be identical with *Patouillardina cinerea* Bres. *Sebacina obscura* Martin is included in this report since an additional collection has been identified; however, a new combination is not proposed since additional study is required before the generic position of this species can be determined.

I should like to extend my sincere thanks to Dr. G. W. Martin, under whose direction this study was made at the Department of Botany at the State University of Iowa and whose interest, encouragement, and criticism contributed much to the progress of the study. Acknowledgements are also due Mr. Robert J. Bandoni for bringing to my attention several specimens of interest and for information concerning the nature of several type specimens.

EXIDIOPSIS (Bref.) Möll., Protobas. 167. 1895.

Exidia subg. *Exidiopsis*, Bref., Untersuch. 7: 94. 1888.

1. *Exidiopsis mucedinea* (Pat.) comb. nov.

Plate 1, Fig. 1

Sebacina mucedinea Pat., Bull. Herb. Boiss. 3: 60. 1895.

Thelephora mucedinea (Pat.) Sacc., Syll. Fung. 14: 214. 1899.

Exidiopsis manihoticola Viégas, Bragantia 3: 23. 1943.

EXPLANATION OF PLATE 1

FIG. 1. *Exidiopsis mucedinea*. a-d. Basidia in various stages of development. e. Four basidiospores, one germinating by repetition.

FIG. 2. *Exidiopsis glabra*. a. Fertile hypha with attached basidia in various stages of development. b, c. Basidia. d. Basidiospores, one germinating by repetition.

FIG. 3. *Exidiopsis podlachica*. a, b. Fertile hyphae with basidia in various stages of development. c. Basidiospores, one germinating by repetition.

FIG. 4. *Exidiopsis sordida*. a, b. Fertile hyphae with basidia in various stages of development. c. Paraphysoid. d. Basidiospores, one germinating by repetition.

FIG. 5. *Exidiopsis fuliginea*. a-c. Basidia and portions of the fertile hyphae. d. Dikaryophysis showing an accumulation of granules in the apical portion. e. Paraphysoid. f. Basidiospores.

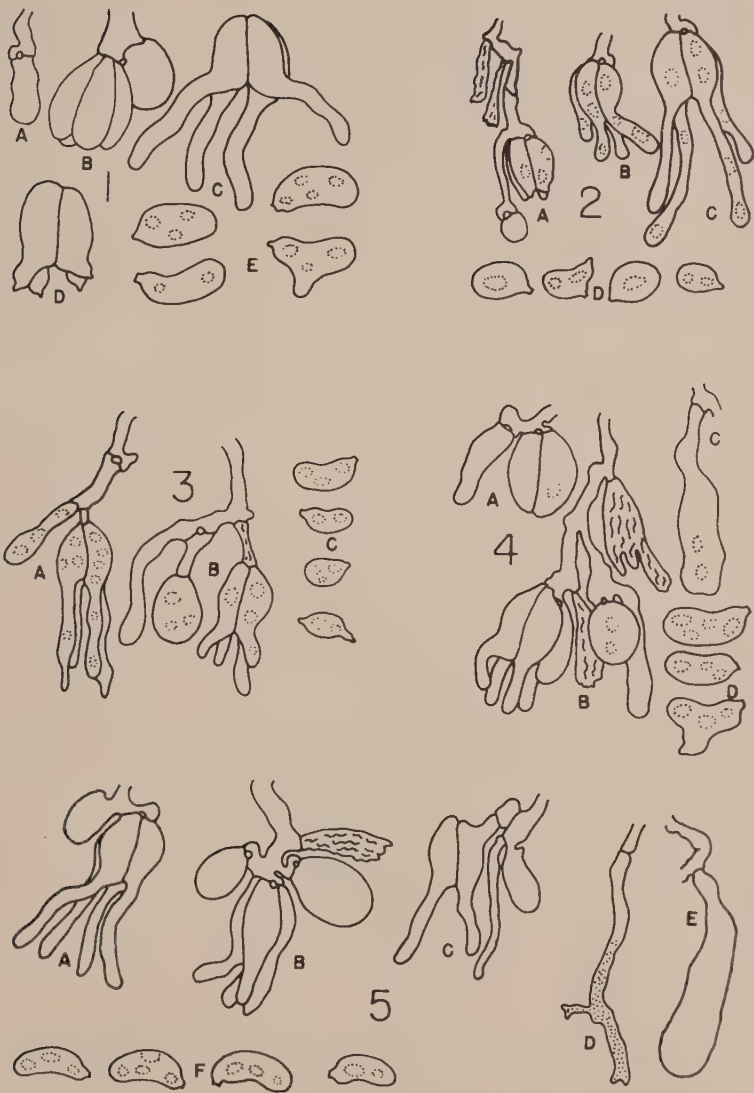


PLATE I

Fructification thin, arid, effused, in the thicker portions appearing arachnoid to pruinose over a thin, gelatinous basal layer, white to light gray or pale pinkish, often with scattered, mineral tubercles piercing the hymenium; drying to a thin, white or light gray, pruinose layer; margins indeterminate and pruinose; fructification 20–100 μ thick, often with mineral granules throughout, composed of a thin basal layer of indistinct hyphae parallel with the substrate, an intermediate layer of distinct, branching, interwoven, ascending hyphae, which is sometimes lacking in the thinner fructifications, and a hymenial layer, 20–50 μ wide, of fertile hyphae and simple to little-branched nodulose dikaryophyses, 2.5–4 μ in diameter, dikaryophyses in older portions becoming granular, then disintegrating and imparting a light, yellowish, granular appearance to the upper portion of the hymenium; probasidia becoming obovate to subglobose, 10–12.5–14(–16.5) \times 8–10–12.5 μ , proliferating from the base of the basidia without conspicuous clamp-connections or formed terminally with clamp-connections at the base, becoming 2–4-celled by longitudinal division; epibasidia up to 18 μ in length, 2.5–3 μ in diameter, often somewhat tortuous, each tipped with a short sterigma; basidiospores allantoid, often strongly curved, or elliptical and laterally depressed, granular to guttulate, 10–12.5–14(–16) \times 3.5–5.5(–6.5) μ , germinating directly or by repetition.

On dead wood. Reported from Panamá, Brazil, and Ecuador.

Type locality: Pululahuana, Ecuador.

Illustrations: Lloydia 7: 69, f. 4.; Bragantia 3: 25–26, f. 1–5.

Specimens examined: Panamá: Canal Zone, G. W. Martin 2018, 4080, 6159. Brazil: São Paulo, Instituto Agronomico Campinas 3203, 3689 (type of *Exidiopsis manihotica* Viégas).

Additional specimens of *E. mucedinea* have made possible a more accurate description of the species and have revealed variations which can be expected within the limits of the species.

This fungus is well characterized by the white to gray, arachnoid to pruinose fructification, the allantoid spores, and the curious intermediate hyphal layer composed of branching, interwoven hyphae with somewhat thickened walls. This latter character is well illustrated by Viégas (Bragantia 3: 25–26. 1943). The mineral tubercles are superficially suggestive of the genus *Heterochaete*; however, the projections in *E. mucedinea* are completely mineral in nature as opposed to the hyphal pegs piercing the hymenium of species of *Heterochaete*.

The collections of *Exidiopsis manihotica* Viégas, one designated as the type, are certainly not sufficiently distinct from Martin's specimens and Martin's (Lloydia 7: 67–80. 1944) description of the type to be regarded as distinct.

2. *Exidiopsis glaira* (Lloyd) comb. nov.

Plate 1, Fig. 2.

Tremella glaira Lloyd, Myc. Writ. 5. Myc. Notes 60: 874. 1919.

Sebacina opalea Bourd. & Galz., Bull. Soc. Myc. Fr. 39: 262. 1924.

Soft-gelatinous, widely effused, pale grayish-hyaline, smooth to undulate; drying to a hyaline or yellowish vernicose layer, often pruinose, sometimes evanescent; margins indeterminate and adnate; fructifica-

tion 20–300 μ thick, consisting of a thin basal layer of distinct hyphae, 1.5–3 μ in diameter, parallel with the substrate, lacking in thinner fructifications, an ascending layer of loosely interwoven, subdistinct hyphae which terminates in a hymenium composed of fertile hyphae and dikaryophyses; fertile hyphae tortuous, 1.5–3 μ in diameter, proliferating from the base of the probasidia through clamp-connections with conspicuous loops, bearing basidia crowded in a zone 25–70 μ wide; dikaryophyses up to 1–3 μ in diameter, becoming indistinct, simple to little-branched; probasidia obovate to subglobose, 9–11–13 \times 7–9–10.5 μ , becoming tardily cruciate-septate or rarely only 2-celled; epibasidia slender, flexuous, often expanded near the apex, up to 45 μ long, 1–2 μ in diameter, basidiospores obovate to broadly ovate, often guttulate, obliquely apiculate, 6–9 \times 4–6 μ , germinating by repetition; very young fructifications often interrupted by pulvinate clusters of erect unbranched conidiophores, cutting off conidia, narrowly elliptical or cylindrical, 4–6 \times 1.5–2.5 μ , apparently an imperfect stage of the fungus.

On dead wood. Reported from Ontario, New York, Kentucky, North Carolina, Iowa, Panamá, Cuba, Brazil, Sweden, and France.

Type locality: Near Femsjö, Sweden.

Illustrations: Bourd. & Galz., Hym. Fr. 42, f. 21; Lloydia 4: 18, f. 26–34; Univ. Iowa Stud. Nat. Hist. 17: 77, f. 13; Univ. Iowa Stud. Nat. Hist. 19(3): 109, f. 13.

Specimens examined: Kentucky: K. Wells, 26 Dec., 1955 (3 collections). Iowa: Several collections. Panamá: Prov. Chiriquí, G. W. Martin 2655. Brazil: Rio Grande do Sul, J. Rick, May, 1942. Sweden: Near Femsjö, C. G. Lloyd 27070 (*type*).

The type of *Tremella glaira* Lloyd agrees in both macroscopic and microscopic characters with Iowa specimens of *Sebacina opalea* Bourd. & Galz. as defined by McGuire (Lloydia 4: 20–21, 1941). Rick's specimen from Brazil is identical with other temperate specimens, but the specimen collected by Martin in Panamá differs from other collections examined in that the dikaryophyses are distinct and up to 3 μ in diameter. In all other specimens, when it was possible to measure the dikaryophyses, they were determined as 1.5–2 μ in diameter; however, such a difference is to be expected within the limits of the species, since all other characters are identical with the other collections.

3. EXIDIOPSIS PODLACHICA (Bres.) Ervin, Mycologia 49: 123. 1957.

Plate 1, Fig. 3.

Sebacina podlachica Bres., Ann. Myc. 1: 117. 1903.

Waxy-gelatinous to nearly coriaceous-gelatinous in thicker specimens, widely effused, indeterminate, adnate, surface smooth, undulate to tuberculate, grayish-hyaline or bluish-gray to light yellow in thicker fructifications, mineral accretions sometimes embedded in or below the fructification; drying to a hyaline or a yellow, vernicose crust, mineral accretions then appearing to protrude above the surface; margins lighter, adnate, sometimes white, farinose to fibrillose in young fructifications; fructification 50–1000 μ thick, consisting of a basal layer of varying width, of hyphae parallel with the substrate, dense, in

thinner fructifications, thin-walled, subdistinct, becoming agglutinate, in thicker fructifications thick-walled, distinct, $2.5\text{--}3\ \mu$ in diameter, with numerous clamp-connections, an ascending hyphal layer, loose, interwoven, becoming subdistinct, often divided into numerous growth layers, terminating in the hymenial layer; hymenium of fertile hyphae, dikaryophyses and, rarely, subulate cystidia; dikaryophyses arising from the fertile hyphae, subdistinct, often conspicuously guttulate, tortuous, simple to little-branched, $1.5\text{--}3\ \mu$ in diameter, forming a layer $5\text{--}20\ \mu$ above the basidia; fertile hyphae $2\text{--}2.5\ \mu$ in diameter, bearing basidia in acropetal succession; probasidia at first clavate and subtended by a clamp-connection, the swollen portion becoming delimited from the stalk by a secondary septum without a clamp-connection, stalk $5\text{--}15\ \mu$ long, $2.5\text{--}3\ \mu$ in diameter, fertile portion becoming 2-4-celled by longitudinal or oblique septa, obovate to subglobose, often guttulate, $6\text{--}8.5\text{--}12.5\times 6\text{--}9\text{--}(10)\ \mu$; epibasidia sinuous, $15\text{--}30\times 1\text{--}3\ \mu$, basidiospores obovate to cylindrical-curved, laterally depressed, often guttulate, $6\text{--}10.5\text{--}(13)\times 3\text{--}5\ \mu$, germinating by repetition.

On dead wood. Known from Eastern United States, Panamá, Cuba, Colombia, Brazil and Europe.

Type locality: Poland.

Illustrations: Lloydia 4: 26, f. 58-61; Mycologia 39: 102, f. 9.

Specimens examined: Iowa: Numerous collections. Panamá: Canal Zone, G. W. Martin 6042, G. W. Martin and A. L. Welden 8362, 8410; Prov. Chiriquí, G. W. Martin 2597. Cuba: Santa Clara Prov., W. L. White 841. Colombia: Sierra Nevada de Santa Marta, G. W. Martin 3551. Brazil: Rio Grande do Sul, J. Rick, 4 collections.

This species, as here defined, exhibits wide variation in the color, texture, and thickness but is well characterized by the unique method of basidial formation. *E. podlachica* is very similar to *Exidiopsis sublilacina* (Martin) Ervin and *Exidiopsis fugacissima* (Bourd. & Galz.) Ervin in appearance and microdimensions; however, fresh specimens can easily be distinguished from these closely related species since in *E. podlachica* the basidial stalk, separated from the inflated hypobasidium by a secondary septum, is always present and is always absent in *E. sublilacina* and *E. fugacissima*. Specimens which have been dried and resoaked for examination are often difficult to determine since the fertile hyphae and basidial stalk do not always stain with Phloxine in these specimens; however, by staining with ammonified Congo Red for several minutes, it is usually possible to demonstrate the presence or absence of the basidial stalk. In addition, hymenial characters are useful in separating these closely related species, since *E. fugacissima* lacks distinct dikaryophyses which are always present in both *E. podlachica* and *E. sublilacina*.

E. podlachica is perhaps the most common species of this genus; it is the most frequently collected species in Iowa, is apparently widespread in South America, and is frequently reported from Europe. Olive (Mycologia 39: 90-108. 1947) reports it is fairly common in Georgia.

4. **Exidiopsis sordida** (Olive) comb. nov.

Plate 1, Fig. 4.

Sebacina sordida Olive, Jour. Elisha Mitchell Soc. **60**: 21. 1944.

Soft to waxy-gelatinous, adnate, effused, surface smooth to undulate, grayish-hyaline to olivaceous-brown; drying to a light brown to almost black, vernicose layer, thinner fructifications becoming evanescent on drying, sometimes with mineral granules protruding above the surface; margins indeterminate, adnate, often somewhat lighter; fructification 100–300 μ thick, composed of a basal layer of loosely packed hyphae parallel with the substrate, subdistinct, in thicker fructifications becoming yellowish to black, in thinner fructifications sometimes lacking, then an ascending layer of loosely arranged hyphae, distinct, 2–3 μ in diameter, terminating in the hymenium; hymenium of fertile hyphae, dikaryophyses and, sometimes, clavate paraphysoids arising from the fertile hyphae; dikaryophyses sparse, 1–2 μ in diameter, simple to little-branched, subdistinct; clavate paraphysoids present or absent, sometimes subfusiform, rarely forked or slightly branched, 25–80 \times 4.5–8 μ , proliferating from the fertile hyphae and rarely projecting above the hymenium; fertile hyphae 2.5–3.5 μ in diameter, tortuous, sometimes branched, bearing basidia in series on short stalks or sessile; probasidia arising as elongate structures, becoming globose to subclavate, with conspicuous clamp-connections at the base, often guttulate, becoming longitudinally or obliquely 2–4-celled; epibasidia up to 35 μ long, 2.5–3 μ in diameter; basidiospores cylindrical-curved to broadly obovate, often guttulate, 10–14 \times 4–4.5–6 μ , germinating by repetition.

On dead wood. Known from North Carolina, California, Panamá, and Colombia.

Type locality: Chapel Hill, North Carolina.

Illustration: Jour. Elisha Mitchell Soc. **60**: pl. 3, f. 3; pl. 7, f. 1–10.

Specimens examined: California: W. B. Cooke 16577. Panamá: Prov. Chiriquí, G. W. Martin 2501. Colombia: Sierra Nevada de Santa Marta, G. W. Martin 3774.

This species is apparently closely related to *Exidiopsis podlachica* (Bres.) Ervin from which it can easily be separated by the method of basidial formation and microdimensions. In *E. podlachica* the probasidium arises as a clavate structure with the clamp-connection formed at the point of attachment of the stalk to the fertile hypha. The apical fertile portion is soon delimited from the stalk by a secondary septum formed without a clamp-connection. In *E. sordida* the stalk, if present, is continuous with the fertile hypha, and the clamp-connection is formed at the base of the probasidium. The two tropical specimens with clavate to fusiform paraphysoids arising from the fertile hyphae are to be included in this species in view of the fact that similar structures are either present or absent in *Exidiopsis fuliginea* Rick. Other microscopic details of the tropical specimens are identical with the California specimen and agree with the characters of the type as described by Olive.

5. *EXIDIOPSIS FULIGINEA* Rick, Broteria **5**: 8. 1906.

Plate 1, Fig. 5.

Sebacina variseptata Olive, Mycologia **40**: 595. 1948.

Widely effused, indeterminate, waxy- to cartilaginous-gelatinous, at first hyaline to light yellow, becoming light brown, reddish-brown or olive-gray, surface often grayish or whitish pruinose, smooth or undulate, usually with protruding strands of agglutinate, whitish hyphae; on drying forming a yellow, reddish-brown, or gray vernicose layer; margins usually lighter, adnate; fructification 35–175 μ thick, consisting of a basal hyphal layer, ascending hyphal layer which is rarely lacking, and the hymenium; mineral granules often scattered throughout the hymenium and the subhymenial regions; basal hyphal layer dense, parallel with the substrate, becoming indistinct and agglutinate; ascending hyphal layer at first distinct, loosely interwoven, becoming subdistinct and agglutinate, lacking in thinner specimens; hymenium of clavate paraphysoids, simple to little-branched dikaryophyses, and fertile hyphae; clavate paraphysoids arising as abortive proliferations from the fertile hyphae, hyaline, clavate, rarely cylindrical and terminating in finely branched tips, seldom emergent, 25–35 \times 8–10.5 μ , scattered to completely absent; dikaryophyses simple to sparingly branched, 1.5–3 μ in diameter, somewhat nodulose, becoming filled with brown granules, disintegrating and leaving the granules scattered throughout the hymenium, granulation less often extending into the subhymenial region; fertile hyphae 2.5–4.5 μ in diameter, bearing basidia in dense clusters by lateral proliferations through conspicuous clamp-connections; probasidia arising as elongate structures subtended by clamp-connections, becoming clavate, obovate or ovate, rarely subglobose, often guttulate, becoming 2–4-celled by longitudinal or oblique septa, 9–12–16.5(–18) \times 7.5–9–12 μ ; epibasidia tubular, often flexuous, up to 30 μ in length, 2–3.5 μ in diameter; basidiospores cylindrical and laterally depressed to allantoid, 8–11–13.5 \times 3.5–4.5–5 μ , often guttulate, germinating by repetition.

Found on dead wood, usually corticated. Known from Louisiana, Colombia, and Brazil.

Lectotype locality: São Leopoldo, Brazil.

Illustration: Mycologia **40**: 596, f. 2: 12–27.

Specimens examined: Louisiana: L. S. Olive La. 95 (*type* of *Sebacina variseptata* Olive). Colombia: Sierra Nevada de Santa Marta, G. W. Martin 3354. Brazil: Rio Grande do Sul, J. Rick, 6 collections; São Leopoldo, J. Rick, 1905 (*lectotype*).

This species is well characterized by the tendency of the fertile hyphae to form dense clusters of basidia by lateral proliferation, allantoid spores, and the dikaryophyses which soon become granular and disintegrate, leaving the granules scattered throughout the hymenium. The rather wide variation in color is probably due to the amount of granules in the dikaryophyses, since the lighter specimens normally lack these granules or have them sparingly present. The basidia exhibit an unusually wide range in shape and manner of septation.

The selection of *Exidiopsis fuliginea* Rick as the name for this

species was made after it was determined that six of the seven specimens labelled by Rick as *E. fuliginea* agree with his description. One additional specimen labelled by Rick as *Exidiopsis Moelleri* Rick (non typus) proved to be *E. fuliginea*. Another specimen labelled by Rick as *E. Moelleri* is not in sufficient quantity to determine accurately but is definitely not *E. fuliginea*. Rick's description is lacking in sufficient detail to describe the fungus adequately, but there is little doubt that the material here described from Rick is the fungus upon which the name *Exidiopsis fuliginea* Rick was originally based. The selection of the specimen collected by Rick in São Leopoldo, Brazil, in 1905 as the lectotype was made since this specimen is in the better condition of the two specimens on hand from Rick collected prior to the publication date.

The type of *Sebacina variseptata* Olive is identical with several of Rick's specimens with respect to texture, basidial characters, and basidiospore characters; therefore, Olive's name must be regarded as a later synonym of *E. fuliginea*.

Olive (Mycologia 40: 595. 1948) considered *S. variseptata* and *Sebacina adusta* Burt as distinct species based on basidial characters and appearances when dry. The type of *S. adusta* (J. P. Weir 12) differs from specimens of *E. fuliginea* examined in that *S. adusta* varies from nearly white at the margins to cartridge buff in the older portions and does not exhibit the wide range in basidial size, shape, and manner of septation as are found in *E. fuliginea*. Based on the material at hand, *S. adusta* should be considered as a distinct species, although obviously closely related.

6. *Exidiopsis plumbescens* (Burt) comb. nov.

Plate 2, Fig. 1.

Sebacina plumbea Burt, Ann. Mo. Bot. Gard. 2: 765. 1915. Not *Sebacina plumbea* Bres. & Torr.

Sebacina plumbescens Burt, Ann. Mo. Bot. Gard. 3: 241. 1916.

Effused, adnate, indeterminate, arising in small patches which become confluent, waxy-gelatinous, grayish-hyaline; drying to a bluish-gray, pinkish-white or pure white, strongly pruinose, vernicose layer; margins adnate, similar to the older portions, strongly pruinose; fructification 50–300(–675) μ in thickness, mineral accumulations sometimes present within the fructification, which consists of a basal layer of relatively dense hyphae, parallel with the substrate, thin, hyphae subdistinct, an ascending layer of interwoven hyphae, 1.5–3 μ , toruloid, distinct, with clamp-connections throughout, and a hymenial layer 50–120 μ wide; hymenium of dikaryophyses and fertile hyphae; dikaryophyses 1–3 μ in diameter, tapering to 0.5 μ at the apex, distinct, toruloid, forming a layer 10–25 μ above the basidia; fertile hyphae much-branched, 1.5–4.5 μ in diameter, toruloid, forming basidia by proliferations through conspicuous clamp-connections; probasidia arising as obovate to elongate structures, becoming broadly obovate, ovate to subglobose, 12–14–17 \times 9–10.5–13 μ , becoming 2–4-celled by longitudinal or rarely oblique septa; epibasidia up to 55 μ long, 2.5–3(–3.5) μ in diameter, somewhat flexuous, often enlarging towards the apex;

basidiospores allantoid, conspicuously guttulate, minutely apiculate, (10-)11-13.5-1615 \times (3.5-)4-6 μ , germinating by repetition.

On dead wood. Known from Georgia, Louisiana, Washington, Oregon, Denmark, and Austria.

Type locality: Bingen, Washington.

Illustrations: Ann. Mo. Bot. Gard. **2**: 765, f. 6; Lloydia **4**: 26, f. 50-53; Mycologia **39**: 102, f. 8.

Specimens examined: Oregon: Ex. Herb. D. P. Rogers 1124. Washington: Univ. of Michigan 13068. Denmark: M. P. Christensen 2599. Austria: Tirol, V. Litschauer, 26 May, 1922.

A species well characterized by the narrow, conspicuously guttulate, allantoid spores, and the strongly pruinose aspect when dry. The additional specimens have somewhat smaller basidiospores than the type as described by McGuire (Lloydia **4**: 25-27. 1941). The additional Washington collection (Univ. of Michigan 13068) is somewhat thinner than indicated by McGuire's description but other characters are identical. Olive (Mycologia **39**: 90-108. 1947) reports the thickness of his Georgia collection as 320-680 μ .

Sebacina grisea Pers. ex Bres. as described by Bourdot and Galzin (Hymenomycetes de France. 35-53. 1928) would appear to be identical with *E. plumescens*; however, it seems desirable to retain *E. plumescens* as the specific epithet until such time as Persoon's specimen can be examined and its microscopic structure determined.

7. *Exidiopsis subilacina* (Martin) Ervin, Mycologia **49**: 123. 1957.

One tropical collection was determined as *E. subilacina*, agreeing microscopically with McGuire's description (Lloydia **4**: 30. 1941) and Iowa specimens in every respect.

Specimen examined: Colombia: Sierra Nevada de Santa Marta, G. W. Martin 3824.

BOURDOTIA (Bres.) Bres. & Torr., Broteria ser. bot. **11**: 88. 1913.

Sebacina subg. *Bourdotia* Bres., Ann. Myc. **6**: 46. 1908.

1. *Bourdotia petiolata* (Rogers) comb. nov.

Plate 2, Fig. 2.

Sebacina petiolata Rogers, Pacific Science **1**: 99. 1947.

Firm waxy-gelatinous, widely effused, adnate, surface smooth to undulate, hyaline or opalescent with a yellowish or bluish tinge, often pruinose, embedded mineral accretions often present; drying to a

EXPLANATION OF PLATE 2

FIG. 6. *Exidiopsis plumescens*. a. Probasidia. b-d. Basidia. e. Tip of dikaryophysis. f. Basidiospores, one germinating by repetition.

FIG. 7. *Bourdotia petiolata*. a. Portion of fertile hyphae showing developing probasidium and collapsed basidia. b-f. Nearly mature basidia. g. Gloeocystidium. h. Basidiospores, two germinating by repetition.

FIG. 8. *Bourdotia cinerea*. a. Fertile hypha showing involucre-like sheath of collapsed basidia. b-c. Basidia. c. Incrusted gloeocystidium. e. Gloeocystidia. f. Basidiospores, one germinating by repetition.

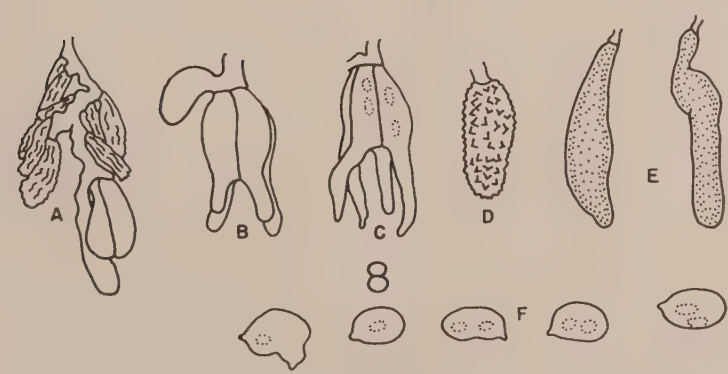
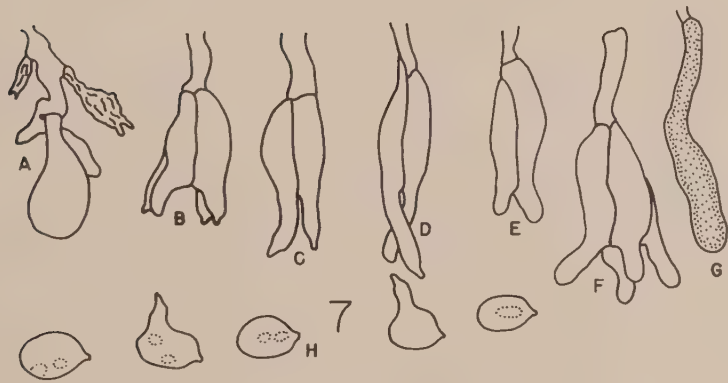
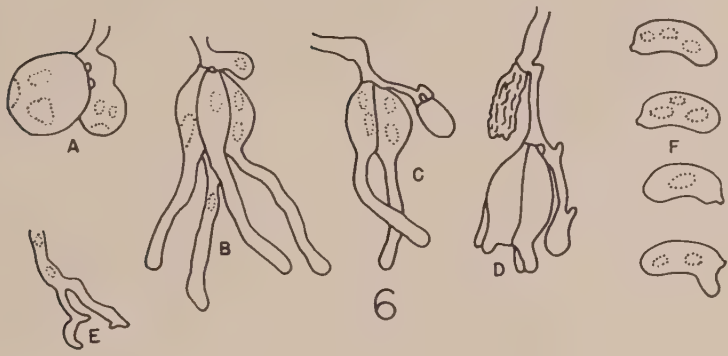


PLATE 2

hyaline or ochraceous vernicose layer, rarely evanescent; margins adnate, indeterminate, of the same color; fructification (40–)250–500 μ thick, consisting of a thin basal layer of subdistinct hyphae parallel with the substrate, dense, from which arise the gloeocystidia, fertile hyphae, and dikaryophyses, often several growth layers present each arising from a horizontal hyphal layer; fertile hyphae nodulose, 2–3 μ in diameter, bearing basidia in acropetal succession, proliferating through inconspicuous clamp-connections at the base of the probasidia; dikaryophyses numerous, 1–3 μ in diameter, much-branched, nodulose, becoming indistinct; gloeocystidia at first hyaline, becoming yellow-granular and flexuous, subclavate, subcylindrical or subfusiform, 30–150 \times 4–7.5 μ , sometimes expanded up to 20 μ in diameter near the apex, often extending through several growth layers; probasidia arising as clavate bodies with the inflated terminal portions becoming delimited by the longitudinal septa which diverge in the lower portion of the probasidia to meet the lateral wall, the fertile delimited portion becoming 2–4-celled by longitudinal septa, obovate to elongate, (10.5–)14–16.5–24 \times 8.5–10.5–12.5 μ , the stalk 15–30 \times 3–4.5 μ ; epibasidia thickened near the base, up to 50 μ in length, 3–3.5 μ in diameter; spores oblong, ellipsoid, to subglobose, 7–11 \times (5–)6–8 μ , germinating by repetition.

On dead wood. Known from Panamá, Cuba, Brazil, Galapagos, Hawaii, and Marshall Islands.

Type locality: Likiep Atoll, Marshall Islands.

Illustration: Pacific Science **1**: 98, f. 2.

Specimens examined: Panamá: Canal Zone, G. W. Martin 5037. Brazil: Rio Grande do Sul, J. Rick, 5 collections. Marshall Island: Likiep Atoll, D. P. Rogers 1475 (*type*).

The additional specimens from Panamá and Brazil agree in all respects with the type. Several of the Brazilian specimens show growth layers, which results in a rather thick fructification, while the collection from Panamá has only one or two growth layers and is, therefore, relatively thin.

This species is well characterized by the unique method of delimiting the globose, fertile portion of the basidium from the stalk, and the finely-branched, nodulose dikaryophyses.

Since this species has gloeocystidia with granular content, bears basidia in close acropetal succession along the fertile hyphae, and is completely resupinate, it is placed in the genus *Bourdotia*. As pointed out by Rogers, *B. petiolata* is closely related to *Bourdotia Galzinii* (Bres.) Bres. & Torr., differing from this species in basidial characters, spore shape and size, and the more finely-branched dikaryophyses.

2. *BOURDOTIA CINEREA* (Bres.) Boud. & Galz., Hym. Fr. 49. 1928.

Plate 2, Fig. 3.

Sebacina cinerea Bres., Fung. Trid. **2**: 99. 1892.

Exidiopsis cerina Möll., Protobas. 167. 1895.

Thelephora cinerea (Bres.) Sacc. & Syd., Syll. Fung. **16**: 183. 1902.

Exidiopsis cystidiophora Höhn., Ann. Myc. **3**: 323. 1905.

Sebacina murina Burt, Ann. Mo. Bot. Gard. **13**: 337. 1926.

Sebacina gloeocystidiata Kühner, Le Botaniste **17**: 26. 1926.

Seismosarca stratos Viégas, Bragantia **6**: 243. 1945.

Sebacina farinacea Rogers, Pacific Science **1**: 97. 1947.

Sebacina stratos (Viégas) Olive, Bull. Torrey Bot. Club **81**: 334. 1954.

Widely effused, resupinate, adnate, waxy- to coriaceous-waxy, grayish-hyaline or white, becoming light gray or creamy, at first porous-reticulate becoming smooth, often pruinose; margins adnate, indeterminate, usually somewhat lighter, often pruinose; drying to a cinereous, white, or light-brown film in thinner fructifications or crust in thicker specimens; fructification 30–175(–325) μ in thickness, consisting of a thin basal layer parallel with the substrate, becoming agglutinate and indistinct, giving rise to an ascending layer of gloeocystidia and, in thicker specimens, to agglutinate hyphae arranged in strands which terminate in another horizontal hyphal layer, which, in turn, gives rise to another ascending layer so that several growth layers may be present, or in thinner specimens the hymenium arising directly from the basal layer, accumulations of mineral granules often present within the fructification; hymenium of dikaryophyses, gloeocystidia, and fertile hyphae; dikaryophyses sparse, simple to little-branched, 2.5–3 μ in diameter, becoming indistinct, rarely incrusting; gloeocystidia abundant, cylindrical, subfusiform or subclavate, sometimes with globose apex, flexuous, thin-walled, at first hyaline, soon becoming yellowish or brownish granular, sometimes becoming incrusting, then projecting at the margins, arising from the basal hyphal layer or the horizontal hyphal layer, 15–50(–60) \times 3–5–9 μ ; fertile hyphae erect, tortuous, 1–2.5 μ in diameter, bearing probasidia in clusters at the apex, the collapsed basidia soon forming an involucre-like sheath along the axis of the fertile hyphae, or in thinner specimens forming an involucre-like sheath around the probasidia; probasidia obovate to elongate, rarely subglobose, formed by short proliferations from indistinct clamp-connections at the base of the basidia, 8–12–16.5(–18) \times 8.5–12–14 μ , becoming tardily cruciate-septate or only 2-celled; epibasidia cylindrical to subulate, up to 25 μ in length, 2.5–3 μ in diameter; spores oblong, broadly ovate, or rarely subglobose, often laterally depressed, guttulate or granular, 7–12 \times (4–)5–8(–9) μ , germinating by repetition.

On rotten wood. Known from North America, Central America, Colombia, Brazil, Europe, Hawaii and the Marshall Islands.

Type locality: Trentino, Italy.

Illustrations: Le Botaniste 17: pl. 1, f. 1–12; Bourd. & Galz, Hym. Fr., 49, f. 26; Lloydia 4: 38, f. 91–94; Univ. Iowa Stud. Nat. Hist. 15: 25, pl. 1, f. 4–6; Pacific Science 1: 98, f. 1; Bragantia 5: 251, f. 7.

Specimens examined: Iowa: G. W. Martin 6452 and several other collections. Panamá: Prov. Chiriquí, G. W. Martin 4401; Barro Colorado Island, G. W. Martin A. L. Weldon 7231. Colombia: G. W. Martin 3617. Brazil: São Paulo, Instituto Agronomico, Campinas 3941 (*type of Seismosarca stralosa* Viégas); Niterói, E. J. H. Corner 668. Sweden: near Uppsala, B. & J. Eriksson 2802. Hawaii: Oahu, D. P. Rogers 1884 (*type of Sebacina farinacea* Rogers). Marshall Islands: Ebon Atoll, D. P. Rogers 1388.

This species is characterized by the dense fructification, usually elongate to obovate basidia, and the tendency to form an involucre-like sheath along the axis of the fertile hyphae in thicker fructifications or around the probasidia in thinner fructifications. Dikaryophyses are present but tend to become indistinct in older specimens. The tropical

specimens tend to become much thicker than temperate specimens with up to 9 growth layers sometimes present and more often have incrustated gloeocystidia or rarely incrustated dikaryophyses.

The type of *Sebacina farinacea* Rogers was at first thought to constitute a distinct species on the basis of the incrustated gloeocystidia, more distinct dikaryophyses, and the lack of an involucre-like sheath of collapsed basidia; however, Corner's specimen from Brazil (E. J. H. Corner 668) has incrustated gloeocystidia but lacks well-defined dikaryophyses. In addition an involucre-like sheath of collapsed basidia can be demonstrated by staining with ammonified Congo Red. According to McGuire (Lloydia 4: 37. 1941) the gloeocystidia in temperate specimens sometimes become incrustated; therefore, the amount of incrustation appears to vary within the species. The difference in thickness is due, most probably, to renewed growth as evidenced by the more numerous growth layers in tropical specimens. Since a distinct difference between the type of *S. farinacea* and *S. cinerea* is lacking, *S. farinacea* is considered here as a synonym.

The type of *Seismosarca stralosa* Viégas is a thick specimen of *B. cinerea* which has broken away from the substrate into numerous, irregular rectangular fragments. The thicker specimens of *B. cinerea* tend to form a crust which breaks away from the substrate upon drying; however, rarely in such a manner as the type of *S. stralosa*. Since the internal structure and spore shape and size are identical with other tropical and temperate specimens which do not show such unique fragmentation upon drying, *S. stralosa* is considered here as a synonym of *B. cinerea*. Olive (Bull. Torrey Bot. Club 81: 329-339. 1954) points out that the type of *S. stralosa* is unrelated to the other species formerly included in the genus *Sesmosarca* and transfers it to the genus *Sebacina*.

Rogers (Pacific Science 1: 92-107. 1947) is followed in including *Exidiopsis cerina* Möll. and *Thelephora cinerea* (Bres.) Sacc. & Syd. as additional synonyms.

GLOEOTROMERA Ervin, Mycologia 48: 692. 1956.

1. GLOEOTROMERA PULULAHUANA (Pat.) Ervin, Mycologia 48: 692. 1956.

Plate 3, Fig. 1.

Tremella pululahuana Pat., Bull. Soc. Myc. Fr. 9: 138. 1893.

Exidiopsis alba Lloyd, Myc. Writ. 4: Letter 44: 8. 1913.

Seismosarca alba (Lloyd) Lloyd, Myc. Writ. 5. Myc. Notes 45: 629. 1917.

Ductifera Milleii Lloyd, Myc. Writ. 5. Myc. Notes 50: 711. 1917.

Exidia alba (Lloyd) Burt, Ann. Mo. Bot. Gard. 8: 366. 1921.

Bourdotia pululahuana (Pat.) Bourd. & Galz., Hym. Fr. 48. 1928.

Gloeotromera alba (Lloyd) Ervin, Mycologia 48: 692. 1956.

Fructifications arising as separate convex pustules, 0.5-5 mm. in diameter, becoming confluent and forming an expanded undulate to tuberculate layer or becoming cerebriform, lobate or coarsely convolute, sometimes forming a large convolute fructification, gelatinous to firm waxy-gelatinous, at first white to pinkish buff, becoming ochraceous; on drying forming an irregular, often pruinose, broken crust which separates from the substrate, or irregular, upright, brittle masses,

olivaceous to ochraceous brown, approaching black when old; on soaking becoming whitish, sordid hyaline or ochraceous; margins free, determinate; fructification consisting of a basal hyphal layer at the point of attachment, an ascending, interwoven hyphal layer and the hymenium; basal layer relatively dense, becoming yellowish, thin, usually parallel to the substrate, hyphae distinct, $2.5-4\ \mu$ in diameter, sometimes with thickened walls; the ascending hyphal layer usually thick, interwoven, much-branched, often with scattered mineral accretions, of distinct hyphae, $2-4.5\ \mu$ in diameter, often with inflated portions up to $9\ \mu$ in diameter, clamp-connections present, often extensively modified, hyphae within the lobes stratified, with a central hyphal layer parallel with the surface of the lobe, giving rise bilaterally to loosely interwoven hyphae terminating in the hymenium or surface, growth layers sometimes present in expanded fructifications as revealed by the presence of layers of collapsed basidia and gloeocystidia; hymenium of dikaryophyses, gloeocystidia, and fertile hyphae, inferior or unilateral, $50-150\ \mu$ in width; dikaryophyses much-branched, nodulose, distinct, $1-2.5(-3)\ \mu$, forming a definite layer $15-85\ \mu$ above the basidia, sometimes arising from the fertile hyphae, or sometimes cylindrical or subclavate, $3-4.5\ \mu$ in diameter, arising from the fertile hyphae and terminating in finely branched tips; gloeocystidia at first hyaline becoming tardily yellowish- to brownish-granular, collapsing, attached below the probasidia, generally restricted to the vicinity of the hymenium, subcylindrical, subfusiform, or subclavate, rarely slightly branched, sometimes inflated at the apex up to $25\ \mu$ in diameter or with apiculate tip, $30-175(-225) \times (3-)4-6-9.5\ \mu$; fertile hyphae $1.5-3.5(-5)\ \mu$ in diameter, usually forming basidia in loose clusters; probasidia arising as elongate to clavate structures subtended by conspicuous clamp-connections, rarely stalked with secondary septa, becoming pyriform, obovate, or rarely subglobose, often guttulate, becoming $2-4$ -celled by longitudinal or oblique septa, $13.5-16-25(-31.5) \times (8-)9-10.5-13.5\ \mu$; epibasidia tubular, often enlarging towards the apex, $2.5-3.5(-4)\ \mu$ in diameter, up to $60\ \mu$ in length; basidiospores oval, short cylindrical and laterally depressed to suballantoid, often guttulate, with blunt apiculus, $9-10.5-12.5 \times 4.5-6.5(-7.5)\ \mu$, germinating by repetition.

On rotten wood. Widely distributed in North and South America.

Type locality: Crater of Pululahua, Ecuador.

EXPLANATION OF PLATE 3

FIG. 9. *Gloeotromera pululahuana*. a. Portion of fertile hypha. b-d. Basidia, "c" and "d" drawn from the same specimen. e, f. Young probasidia. g. Young gloeocystidium. h. Basidiospores, one germinating by repetition. i. Various types of clamp-connections found in the subhymenial hyphae.

FIG. 10. *Gloeotromera sucina*. a-c. Basidia. d. Gloeocystidia, nearly mature. e. Basidiospores, one germinating by repetition.

FIG. 11. *Sebacina obscura*. a-c. Basidia in various stages of development. d. Portion of the fructification showing cylindrical dikaryophysis. e. Basidiospores.

FIG. 12. *Patouillardina cinerea* (drawing made from type of *Sebacina circumdata*). a. Developing probasidia. b, c. Basidia showing manner of septation. d. Basidiospores.

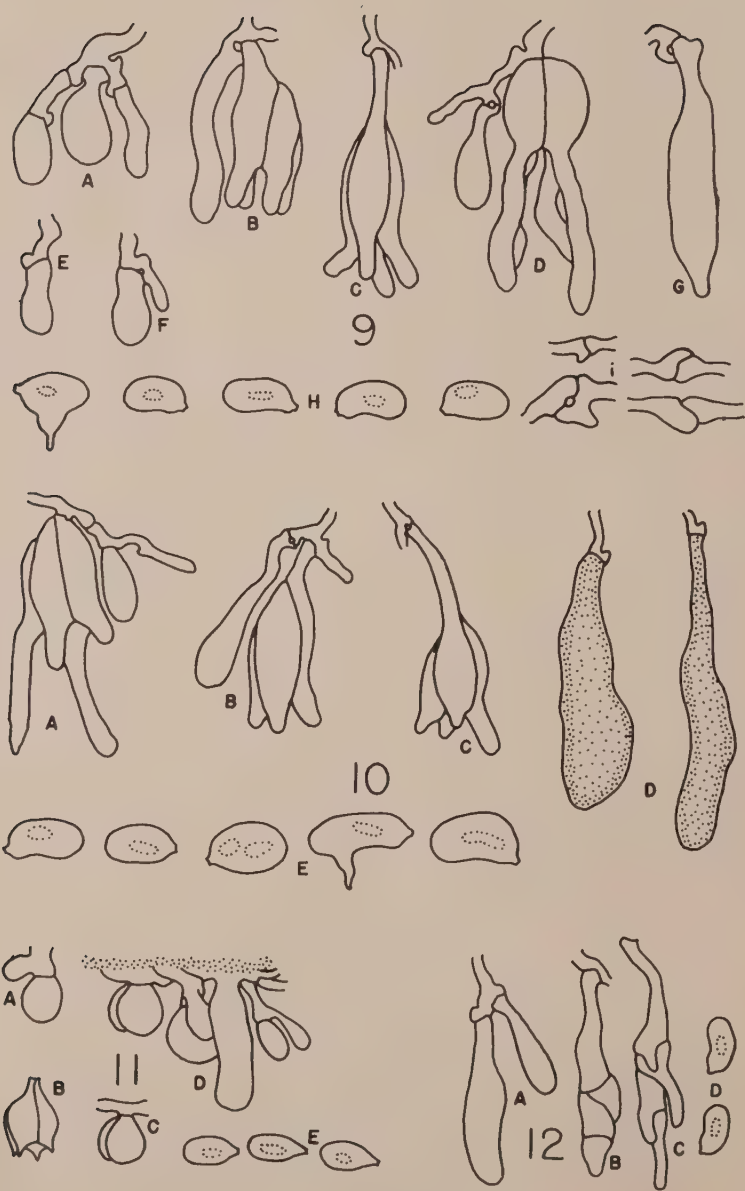


PLATE 3

Illustrations: Univ. Iowa Stud. Nat. Hist. **19**(3): 111, f. 22; Lloyd, Myc. Writ. **5**: 711, f. 1063-1065; Lloyd, Myc. Writ. **5**: 874, f. 1491; Lloyd, Myc. Writ. **6**: pl. 177, f. 1928-1929.

Specimens examined: Ohio: F. O. Grover, 18 Oct., 1931. Tennessee: A. J. Sharp and J. K. Underwood, 15 July, 1934. Iowa: several collections. Missouri: A. M. Looney, 27 April, 1931. Louisiana: L. Frederick and B. Lowy, 30 Oct., 1954. Mexico: W. A. & E. L. Murrill, 28 Dec., 1909. Panamá: Prov. Chiriquí, G. W. Martin 2042, 2422, 2477, 2483, 2516, 2529, 2614, 2829. Costa Rica: C. W. Dodge and W. S. Thomas, 7 Nov., 1929. Colombia: Sierra Nevada de Santa Marta, G. W. Martin 3454. Brazil: Bahia, C. G. Lloyd 9706 [as *Exidia janus* (B. & C.) Lloyd]; Rio Grande do Sul, J. Rick, 8 collections. Uruguay: Plantae Uruguayenses (leg. G. Herter) 201. Argentina: R. Singer S-113, Singer and Digilio T-732.

As defined above, *G. pululahuana* exhibits a wide range of several characters but can easily be distinguished because of its pustulate origin, finely branched, nodulose dikaryophyses, subcylindrical gloeocystidia, and distinct subhymenial hyphae with prominent clamp-connections. The basidia show wide variation in size and shape even within the same mount but are always subtended by definite clamp-connections.

Since there is lacking any consistent difference between forms previously called *Sesmosarca alba* (Lloyd) Lloyd and *Tremella pululahuana* Pat., it is my opinion that the two names represent the same species and are, therefore, here combined. In general, the name *S. alba* was applied to the large, coarsely convolute, usually white form in the temperate zone, and the name *T. pululahuana* was applied to the tropical expanded forms. Examination of the Louisiana collection reveals that the temperate form arises as small pustules which become confluent to form the large undulate fructification previously called *S. alba*. Lowy (Lloydia **18**: 149-181. 1955) points out that in the early stages of development *Exidia alba* (Lloyd) Burt "bears a striking resemblance to *Stypella*." The cerebriform to convolute form also occurs in the tropics and is not to be considered different from temperate specimens. Generally, the expanded specimens, often showing growth layers, are collected in the mountainous regions of South America, and the undulate, cerebriform, or convolute specimens have usually been found in the temperate zone or at lower altitudes in the tropics. Since there is lacking any microscopic distinction, except the presence of growth layers in some expanded specimens, it is apparent that the form of the fructification varies according to the environmental conditions or with age of the specimens; therefore, such a character can not, in this case, be used to delimit species. The presence or absence of growth layers is not sufficient, in my opinion, to separate the specimens into two species since such a character is probably caused by renewed growth following adverse environmental conditions. There is no consistent difference in color and only slight differences in texture. The larger forms tend to be more nearly waxy-gelatinous, rather than gelatinous, which could be attributed to the more rapid growth of the larger specimens, and certainly such a distinction is not sufficient to separate the two forms into different species.

This species combines several characters of *Bourdodia Galzinii* (Bres.) Bres. & Torr. and the genus *Exidia*, differing from *B. Galzinii* primarily by its method of growth, more distinct and larger subhymenial hyphae, and the more abundant dikaryophyses. *G. pululahuana* differs from *Exidia* in texture, the absence of a tough epihymenial layer, and the presence of gloeocystidia. Therefore, its maintenance in a separate genus seems justified.

According to Mr. Robert J. Bandoni (personal communication), the type specimen of *Tremella janus* B. & C. is dacrymycetaceous; therefore, the combination of *Exidia janus* (B. & C.) Lloyd is based on a misidentification since the specimen labelled C. G. Lloyd 9706 is certainly *G. pululahuana*. Although Lloyd (Myc. Writ. 5. Myc. Notes 60: 873. 1919) was unable to see clearly any basidia in the type of *T. janus*, he concluded that it was a tremellaceous fungus since it compared favorably, in Lloyd's opinion, in external appearance with the specimen labelled C. G. Lloyd 9706, which clearly exhibits tremellaceous basidia.

The inclusion of *Ductifera Milleii* Lloyd as a synonym is based upon a study of the type by Martin. Lloyd apparently considered the young gloeocystidia as cylindrical basidia, since, according to Martin, typical tremellaceous basidia are present.

2. *Gloeotromera sucina* (Möll.) comb. nov.

Plate 3, Fig. 2.

Exidia sucina Möll., Protobas. 169. 1895.

Seismosarca hydrophora Cooke sensu Lloyd, Myc. Writ. 5. Myc. Notes 45: 629. 1917.

Sebacina lactescens Burt, Ann. Mo. Bot. Gard. 13: 336. 1926.

Fructifications arising as small pustules, 0.5–2 mm. in diameter, which become confluent to form a cerebriform to erumpent, somewhat convolute fructification, waxy-gelatinous to firm waxy-gelatinous, white or gray to light ochraceous; when soaked varying from sordid-hyaline, white to ochraceous, surface smooth to gyrose; drying to a sordid-hyaline to an ochraceous-brown, irregular crust, surface somewhat pruinose; margins free, determinate; fructification consisting of a basal hyphal layer at the point of attachment, of distinct hyphae, densely interwoven, sometimes lacking, and an ascending, loosely interwoven layer of hyphae arising directly from the substrate at the point of attachment or from the basal hyphal layer, distinct, 1.5–4.5 μ in diameter, with numerous clamp-connections, terminating in the hymenium, sometimes with mineral crystals scattered throughout; hymenium inferior or unilateral, 50–100 μ wide, consisting of dikaryophyses, gloeocystidia, and fertile hyphae; dikaryophyses relatively sparse, simple to little-branched, 1–3 μ , becoming indistinct, rarely arising from the fertile hyphae; gloeocystidia usually clavate or sometimes subcylindrical or subfusiform, at first hyaline, soon becoming yellow or brownish granular and flexuous, restricted to the vicinity of the hymenium, arising below the probasidia, never emergent, rarely slightly branched, 30–80 \times 5–9–16.5 μ ; fertile hyphae 1–2 μ in diameter, forming basidia in clusters, proliferating through conspicuous clamp-connections

at the base of the probasidia; probasidia arising as elongate structures becoming ovate, obovate to pyriform, becoming 2-4-celled by longitudinal to oblique septa, $14-20-30(-40) \times (9-10-12.5-15 \mu$; epibasidia $3-4.5 \mu$ in diameter, up to 50μ in length, cylindrical; basidiospores short-cylindrical and usually laterally depressed or elliptical, apiculate, usually guttulate, $(9-10-12-15) \times (5-6-7.5-9 \mu$, germinating by repetition.

On dead wood. Known from New Mexico, Panamá, Jamaica, Windward Islands (Grenada), Brazil, Australia.

Type locality: Blumenau, Brazil.

Illustrations: Lloyd, Myc. Writ. 5: 629, f. 894; Mycologia 28: 220, f. 2.

Specimens examined: New Mexico: B. Shimek, 12 Aug., 1905. Panamá: Prov. Chiriquí, G. W. Martin 4291. Jamaica: W. A. and E. L. Murrill, 29 Dec.-2 Jan., 1908-09. Windward Islands: Grenada, R. Thaxter, 1912-1913 (*type* of *Sebacina lactescens* Burt). Brazil: Rio Grande do Sul, J. Rick, 2 collections. Australia: Mt. Compass, J. B. Cleland 19; Mt. Lofty, J. B. Cleland, 8 April, 1922; South Australian National Park, J. B. Cleland 20, 33, 35, 37, 50.

This species differs from the closely related *G. pululahuana* in that the dikaryophyses are relatively sparse and simple to little-branched, the basidiospores are somewhat larger, and the gloecystidia distinctly shorter and usually clavate. It is similar to *G. pululahuana* in the manner of growth and basidial characters.

The assignment of these specimens to *Exidia sucina* Möll. is made with some reservation, since Möller describes the spores of *E. sucina* as $10-12 \times 4-5 \mu$. The basidiospores in these specimens are somewhat larger in diameter, but the difference is not great. Möller describes the presence of "gelblichem Inhalte strotzenden Schlauchen", which he further states are similar to the structures described by Patouillard for *Tremella pululahuana* Pat. Möller unquestionably had reference to gloecystidia, which he further describes as being clavate, measuring $60-80 \mu$ in length and up to 8μ in diameter, and arise below the basidia from a separate hyphal system. This is nearly identical with the form, size, and method of formation of the gloecystidia in the specimens examined. The manner of growth and form of the fructifications described by Möller are the same as observed in the present specimens. Möller described the color when fresh as amber-yellow; however, since the specimens at hand have been collected for some time, the color when collected is not definitely known; but several of them appear amber-yellow when soaked. In addition, the specimens when fresh have been described by various collectors as white, grayish-hyaline, yellowish or brown.

In view of the many similarities between Möller's description and the characters of the specimens examined, it appears that the present specimens can logically be assigned to the species Möller originally defined.

The type of *Sebacina lactescens* Burt is pustulate in origin, much thicker than most specimens of *Bourdotia Galzinii* (Bres.) Bres. & Torr., and has distinct subhymenial hyphae with numerous clamp-connections characteristic of *G. sucina*. The dikaryophyses, basidiospores, and

gloeocystidia are similar to those of the other specimens included within this species.

The Australian specimens differ slightly from most American specimens in that the former generally have somewhat smaller basidiospores and longer probasidia; however, certain specimens from both continents are intermediate, with reference to the form and size of the probasidia, between the typical specimens from both localities. Therefore, it seems desirable to include the Australian specimens within the species.

SPECIES INQUIRENDAE

1. SEBACINA OBSCURA Martin, Lloydia 7: 70. 1944.

Plate 3, Fig. 3.

Widely effused, indeterminate, very thin, when moist appearing as a white, arachnoid growth over a grayish, gelatinous film; when dry appearing as a white, arachnoid to pruinose layer over a gray to light brown film; margins adnate, similar to mature portions; fructification 10–30 μ thick, consisting of several prostrate strands of hyphae, 1.5–3 μ in diameter, without observable clamp-connections, unbranched dikaryophyses widely scattered, cylindrical, obtuse, sometimes emergent, 15–30 \times 5–7 μ , hyaline; probasidia 6–10 \times 5.5–8.5 μ , at first obovate, becoming globose, borne either on repent hyphae or on short, upright, fertile hyphal segments, which are up to 12 μ in length and 2.5–3 μ in diameter, proliferating from the base of the basidia without clamp-connections, becoming cruciate-septate and then appearing truncate at the apex; epibasidia lacking, each basidial segment producing directly a short, slender sterigma upon which a basidiospore is borne; basidiospores elliptical-fusoid, somewhat curved, often guttulate, 9–10 \times 3.5–4.5 μ .

Reported only on dead attached leaf stalk of the date palm. Known only from Summit and Barro Colorado Island in Panamá.

Type locality: Summit, Panamá, Canal Zone.

Illustration: Lloydia 7: 69, f. 5.

Specimens examined: Panamá: Summit, G. W. Martin 2873 (*type*); Barro Colorado Island, G. W. Martin and A. L. Welden 7638.

The second, somewhat thicker collection of *S. obscura* reveals the presence of cylindrical, unbranched, hyaline dikaryophyses which arise at the same level or below the basidia and often project above the basidial level. These structures are present in the type but much more widely scattered.

This species is unlike the species of *Exidiopsis* known in that there is lacking a definite hymenium in *S. obscura*. In addition the short truncate basidia without epibasidia are entirely distinct from the basidia of the other species of *Exidiopsis*. Bodman (Lloydia 15: 231–232. 1952) has suggested that *Heterochaete kneiffiopsis* Pat. and *Heterochaete sublivida* Pat. do not belong to the genus *Heterochaete* since they lack the hyphal pegs typical of this genus. It is possible that *S. obscura* is related to these tropical arid species but certainly the relationship is not close. Since there is no evidence of an involucre

sheath of collapsed basidia around the fertile hyphae and probasidia, since the granular material is not present in the cylindrical dikaryophyses, and since the basidiospores are elliptical-fusoid rather than approaching globose, as is typical of the more arid *Bourdotia* species, it appears that *S. obscura* should not be placed in the genus *Bourdotia*. Further studies are required before this matter can be given even temporary solution.

SPECIES EXCLUDENDAE

1. SEBACINA CIRCUMDATA Pat., Bull. Soc. Myc. Fr. **39**: 47. 1923.

Plate 3, Fig. 4.

The type collection of this species was made in Cambodia (Indo-China) in July, 1921, by M. Petelot and was, apparently, communicated to Patouillard for identification. Microscopic and macroscopic characters are essentially the same as those described by Martin (Bull. Torrey Bot. Club **62**: 339-343. 1935) for *Patouillardina cinerea* Bres. Examination of the type of *S. circumdata* reveals the presence of fusiform basidia becoming 2-4-celled by transverse to oblique septa, each unit bearing an epibasidium 2-3 μ in diameter. The basidia measure 24-34 \times 6-7.5 μ . The few spores found were 9-9.5 \times 4.5-6 μ . Patouillard gives 18-25 \times 10 μ as the basidial size and did not observe any spores. There is present a brownish, basal hyphal layer which gives rise to an ascending portion of irregular, colorless hyphae terminating in the hymenial layer. Dikaryophyses and fertile hyphae compose the hymenium. The fructification is adnate, effused, and waxy-gelatinous when soaked. When dry the color varies from sordid-white at the margins to light-brown in the central portion.

Although the basidia and spores are somewhat smaller than usually given for *P. cinerea*, there is little doubt that the type of *S. circumdata* Pat. is identical with *Patouillardina cinerea* Bres.

Specimens of *P. cinerea* are on hand in the State University of Iowa Mycological Herbarium from the following locations: Rio Grande do Sul, Brazil; Vera Cruz, Mexico; Ujae Atoll, Marshall Islands; Barro Colorado Island, Canal Zone; Taboga, Panamá; and Santa Clara Prov., Cuba. This collection from Indo-China extends the known range of *P. cinerea* to Southern Asia.

